REPORT RESUMES

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THE ADAPTATION FOR GROUP CLASSROOM USE OF CLINICAL TECHNIQUES FOR TEACHING BRAIN-INJURED CHILDREN.

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REPORT NUMBER CRP-186 PUB DATE 64
CLARKE COUNTY SCHOOL DISTRICT, ATHENS, GA.
EDRS PRICE MF-$0.18 HC-$4.40 110P.

DESCRIPTORS- *LEARNING DIFFICULTIES, *MENTALLY HANDICAPPED, CLASSROOM TECHNIQUES, GROUP INSTRUCTION, *LOW ACHIEVERS, *SPECIAL EDUCATION, PUBLIC SCHOOLS, CLINICS, *HANDICAPPED CHILDREN, TUTORING, REMEDIAL PROGRAMS, PROVIDENCE, RHODE ISLAND

THIS STUDY SOUGHT TO DEVELOP A PUBLIC SCHOOL PROGRAM FOR BRAIN-INJURED CHILDREN OF AVERAGE OR LOW AVERAGE INTELLECTUAL POTENTIAL. THE OBJECTIVES WERE--(1) TO COLLECT CLINICAL TUTORING TECHNIQUES BEING USED, (2) TO CLASSIFY CLINICAL TUTORIAL METHODS IN A FRAMEWORK USEFUL FOR DEVELOPING TECHNIQUES FOR GROUP TEACHING, (3) TO ADOPT CLINICAL TUTORIAL TECHNIQUES TO GROUP TEACHING, (4) TO DEVELOP A MODEL DEMONSTRATION CLASSROOM FOR EXPERIMENTING WITH AND TESTING THE ADOPTED CLINICAL TUTORIAL TECHNIQUES TO PROVIDE OBSERVATIONAL OPPORTUNITIES FOR TEACHERS AND EDUCATION STUDENTS, AND (5) TO DEVELOP NEW HYPOTHESES FOR EXPERIMENTATION IN GROUP EDUCATION OF BRAIN-INJURED CHILDREN. IT WAS FOUND THAT GREAT CARE HAD TO BE EXERCISED IN THE SELECTION OF THE CHILDREN FOR THE CLASS TO KEEP THE RANGE OF LEARNING PROBLEMS AS NARROW AS POSSIBLE. THE SIZE OF THE CLASS MUST BE KEPT UNDER 10. BESIDES HAVING MOTIVATED AND SKILLED TEACHERS, THERE MUST BE PROFESSIONAL ASSISTANCE AVAILABLE OUTSIDE THE CLASSROOM--A PHYSICIAN, PHYSICAL THERAPIST, PSYCHOLOGIST, AND SOCIAL WORKER AS A MINIMUM. THERE SHOULD ALSO BE A FULL-TIME TEACHER'S ASSISTANT IN THE CLASSROOM, AND SELECTION CRITERIA FOR GROUPING BRAIN-INJURED CHILDREN SHOULD BE BASED MORE ON EDUCATIONAL BEHAVIOR THAN ON MEDICAL DIAGNOSIS. (JL)

ED002811

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THE ADAPTATION FOR GROUP CLASSROOM USE OF CLINICAL TECHNIQUES FOR TEACHING BRAIN INJURED CHILDREN

Cooperative Research Project
No. 186

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RHODE ISLAND DEPARTMENT OF EDUCATION
Providence, Rhode Island

1964

The research reported herein was supported by the Cooperative Research Program of the Office of Education, United States Department of Health, Education, and Welfare.

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CHAPTER I

THE PROBLEM

Traditionally, the relatively few and recent attempts which have been made to provide academic instruction to brain-damaged children have been limited largely to a tutorial basis. This system has proved to be expensive and inefficient. If similar instructional techniques could be adapted for use in the classroom with groups of students, a significant savings in time, money, and effort would likely result. In the eight-year period prior to the initiation of this project, it was observed that children who had "graduated" from the Nursery School-Kindergarten Program at the Meeting Street School, Providence, Rhode Island (a special class school for brain damaged children), were having learning difficulties when enrolled in classes in the public school system. These children all had a history of brain damage, some with little obvious physical handicap. All were of average to low average intellectual potential, and each one had been unable to achieve scholastically up to expectation in many public school classes. Apparently, the brain disorder was impeding their educational progress once they left behind the opportunity for individualized and specialized instruction. Professional opinion has suggested that special educational techniques could help these children realize their educational potentials. Some tutorial techniques have proved to be effective in the education of children with similar handicaps. However, tutorial education is expensive for public schools, and such instruction was apparently out of the question for these children. The alternatives which loomed immediately in this situation were either to resign oneself to the inevitable educational retardation and/or failure of these children in the regular classroom in the public schools, or to seek out classroom techniques usable with groups of brain damaged children which would serve to overcome the inhibiting effect upon learning of the usual symptoms of organic brain disorders.

A detailed diagnostic evaluation of these children including educational, psychological, pediatric, neurological, psychiatric, opthalmological, optometric, speech, orthopedic and EEG measurements, indicated that their academic and other psychopathological difficulties might well be related to visual-perceptual difficulties which were adversely affecting their reading, writing, and arithmetic development, despite the fact that their general intellectual ability was within the average range. Such learning problems are usually coped with only through special tutorial programs. However, since this form of instruction is not economically feasible in local public school systems, it was proposed that an attempt be made to investigate the feasibility of applying clinical tutorial techniques to the classroom teaching of brain damaged children.

CHAPTER II

OBJECTIVES

The objectives of the study may be summarized as follows:

1. To collect clinical tutorial techniques being used to educate brain injured children.

2. To classify clinical tutorial techniques for educating brain injured children in a framework useful for developing techniques for group teaching.

3. To adapt clinical tutorial techniques to group teaching of brain injured children.

4. To develop a model demonstration classroom for experimenting with and testing the adopted clinical tutorial techniques in order to determine their feasibility for group use.

5. To provide a laboratory situation for the observation of the reactions of brain injured children to group teaching procedures.

6. To provide observational opportunities for teachers and education students.

7. To develop new hypotheses for experimentation in group education of brain injured children.

CHAPTER III

RELATED RESEARCH

Investigations concerned with brain injured children have dealt primarily with their psychopathologies and motor and behavior disturbance. The literature dealing with educational practices for these children is sparse. Careful scrutiny discloses that four basic teaching approaches seem to account for most of the reported procedures in dealing with these children, namely:

1. The classical work of Strauss and Lehtinen.
2. The teaching devices of the Columbus State School based on Lisa Gellner's theoretical implications.
3. The association method of Mildren Mc Ginnis and the Central Institute for the Deaf.
4. The kinesthetic method of Grace Fernald.

Each of these basic approaches was evolved for dealing with diverse primary problems associated with the phenomenon of brain injury.

The pioneer work of Strauss and Lehtinen[1] provided a differential procedure for children whose learning difficulties stemmed from disturbances in perception, thinking and behavior, either separately or in combination. Their method was based on experiences derived from studies into the perceptual and conceptual processes of brain injured children. Essentially, these educational procedures emphasize a structured learning environment and the adjustment of teaching materials. These are provided through the reduction of classroom space, which eliminates extraneous stimuli, the control and reduction of environmental stimuli, the careful structuring of both the school program and related life activities, and finally through the increase in the stimulus value of materials constructed to deal with specific psychopathological characteristics. Additionally, the Strauss and Lehtinen methodology stresses the utilization of materials which are self-tutoring in order to minimize a completely individualized instruction.

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[1] A. A. Strauss and L. Lehtinen. Psychopathology and Education of Brain Injured Children (New York: Grune and Stratton, 1947)

Project 50 at the Columbus State School[2] evolved teaching devices for dealing with those handicapping characteristics which are believed to be natural consequences of neurological disturbance. Much of Lisa Gellner's theoretical framework for justifying these devices and methodologies is borrowed from the Strauss philosophy. The uniqueness of this approach lies in its breakdown of methodologies, techniques and materials specific to four sub-groups of brain injured children classified as visual-somatic, visual-autonomic, auditory-somatic, and auditory autonomic. These breakdowns define groups of children in behavioral terms rather than in etiological groups. Whereas the Strauss procedures are aimed at a group of school-age children, the Columbus program as described is primarily for pre-school age children.

Outlining four schedules, the authors of this program suggest a class structure for severe cases, one to three children only with an adult for each child, and for the second level, four to seven children with one teacher and a helper. It is only at the fourth level, with the number of children unspecified and where the children have developed some skills in all areas, that one finds the recommendation for a single teacher.

The McGinnis-C. I. D.[3] method was evolved for educating aphasic children. Aphasia as defined is an impairment of language capacity and usage resulting from some defect of the central nervous system. Although the program emphasis for children with this disorder is on the development of speech and language, the over-all program provides for teaching academic subjects as well. That portion of the program which deals with language needs proceeds from the teaching of individual sounds to the combination of these sounds into words and later from words into more complex language. This procedure stems from the child's inability to produce or understand language and consequently, it is felt that education must be directed toward the development of language skills. Teachers utilizing this methodology must have basic understanding and training in speech correction.

According to the Association method which is based upon the systematic association of motor skills and sensory capacities, the basic principles for teaching aphasic children involve: (1) a framework or elemental approach to learning words; (2) emphasis on precise articulatory position for each sound; (3) careful association of each articulatory position and sound with the appropriate letter symbol of cursive script; (4) use of expression as the foundation or starting point in building language; (5) systematic sensory motor association.

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[2] Ruth M. Patterson, Editor, "Teaching Devices for Children with Impaired Learning" (Columbus, Ohio: The Columbus Foundation, 1958).

[3] Mildred E. McGinnis. "The Association Method for Diagnosis and Treatment of Congenital Aphasia". Unpublished Master's dissertation, Washington University, St. Louis, 1939.

Each of the previous methods espouses a multi-sensory avenue to learning.

Perhaps the most famous advocate of a kinesthetic approach to the learning problems of children is Grace Fernald[4] whose publication describes systematic techniques of re-educating non-readers, poor spellers, and arithmetic disability cases. Essentially, the Fernald method utilizes tactual, manual and kinesthetic techniques in five steps to teaching reading. First, the non-reader writes a story about any subject that he wishes. Second, when he wants to write in the story a word he cannot spell, the teacher writes or prints it on a large card and the child traces the copy with his finger as he pronounces the word. Third, the child traces the word until he can write it correctly without looking at the copy. Fourth, he writes the word in his story. Fifth, the completed story is typewritten and the child reads it. By writing many stories in this fashion he eventually builds up a large recognition vocabulary and acquires the ability to learn words without resorting to tracing.

A similar technique is used in teaching spelling except that practice in the tracing, pronunciation and writing stages is more prolonged. The remedial measures in arithmetic also stress the same kinesthetic approach. The child develops numbers concepts by working out problems with sticks, pins, money, and other concrete objects.

As can be seen, each of the methodologies discussed aims at different levels of handicap usually observed in the educational behavior of brain injured children. Many teachers have reported satisfactory results when utilizing the Montessori[5] approach. As far as can be determined, this latter procedure was not originally evolved for children manifesting the symptomatology of brain damage.

Although one may discover in the literature additional descriptions for teaching brain injured children, it would seem that most of them are in some way adaptations of these basic procedures altered by the individual teacher's experiences in utilizing them. Significantly, none of the methodologies reported in the literature were advocated for application to groups of children. They were recommended for use with children on an individual or tutorial basis.

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[4] Grace Fernald, Remedial Techniques in Basic School Subjects (New York: McGraw-Hill Company, 1943).

[5] Maria Montessori, Montessori Method (New York: Frederick A. Stokes Company;,1912).

CHAPTER IV

PROCEDURES

Organizing the Class

A classroom devoted entirely to the instruction of brain injured children was established at the Henry Barnard School in Providence, Rhode Island, the laboratory school of Rhode Island College. A class of ten children was organized early in the beginning of the academic year. These ten children were selected from the files of two widely-known institutions in Rhode Island: the Meeting Street School, a diagnostic and treatment center specializing in brain injury dysfunction; and the Emma Pendleton Bradley Hospital, a psychiatric training center and residential hospital specializing in the diagnosis and treatment of pre-teenage children who are emotionally disturbed and/or who show adjustment problems.

The following criteria and restrictions were employed in the selection of the subjects of the study:

1. Hyperkinesis
2. Visual-motor and perceptual task difficulty
3. Absence of home background emotional stress
4. Possession of at least near normal intelligence
5. A history of previous school failure, particularly in the area of reading and arithmetic skills
6. Inability to learn from available classroom procedures and techniques
7. Sufficient parental interest to minimize drop-out probability

Initially, nine children were selected for the experimental class which became operational in September, 1959. There were seven boys and two girls ranging in chronological age from 6-8 to 9-10. The tenth child, a boy, joined the class at the beginning of the second term. All of the children remained in the class throughout the first year.

Conducting the Class

The teacher for the special class taught for several years in special and ungraded classes in the Providence public schools. She is an associate professor of special education at the Henry Barnard School and holds a Master's degree in special education. She is currently completing her doctorate in special education. Her most recent experience just prior to her appointment as teacher for the project was as a teacher of educable retarded children in a special class.

Additional instructors were also available for conducting non-academic activity as part of the overall program. One was the supervisor of audio-visual aids at Rhode Island College who directed a weekly audio-visual session with the children. The other was an activity leader from the Emma Pendleton Bradley Hospital who conducted physical therapy sessions and integrated play activity four afternoons per week. The normal afternoon schedule called for swimming or ice skating on Monday, arts and crafts on Wednesday, activity games outside the school on Thursday, and tumbling on Friday.

The class met daily in a large, well-lighted and generally attractive room in the Henry Barnard School, which at the time the project began was almost brand new. Windows along the south side of the room provided a view of a more or less court that was periodically used as a play area by children from regular classes in the school. However, the room was not equipped with a one-way observation window, and this meant that visitors and observers had to enter the classroom physically to view the children. These visitors and observers during the period of the project were limited primarily to the staff of the project and consultants.

Initial Class Contacts and Observations

Prior to the beginning of the school year, the teacher read extensively in what little literature on teaching the brain damaged was available at the time, looking for ideas and techniques to use. She found some that later proved helpful. However, for the most part, she devised her own materials and techniques according to the educational and behavioral needs of each child as she was able to determine them. At the beginning she relied rather heavily on the Montessori system and improvised many of her own materials to fit the Montessori method. She also relied heavily upon Strauss and Lehtinen, because at the time they were almost the only recognized authorities in the field. Some Strauss and Lehtinen ideas she found applicable and valid in her situation; others she did not. She started, for instance, with a bare-walled classroom as the authors prescribe, but soon found out this wasn't necessary for the group. The teacher found that the youngsters were distractible but that the distractability appeared to be caused by internal factors as well as by external stimuli.

Practically all the children were characterized by hyperactivity, and the teacher rapidly concluded that her first objective to get the class started was to establish some semblance of routine. She first took such steps as instructing each child, by demonstration and drill, the exact way he was to come in the room, go to his place, and line up with the others. They had to be shown what it meant to line up, since none had learned the concept in their previous experiences. She did eventually succeed in establishing structure in the class, but it was a precarious accomplishment. Any unusual occurrence, such as a visitor entering the room, had a disintegrating effect. The effects of such a disturbance took a long time to overcome, although as the year progressed, the class improved somewhat in its ability to tolerate breaks in the normal routine.

Contributions of the Consultants

In view of the fact that at the time this investigation was underway there was little available in the professional literature regarding specific techniques utilized in the instruction of brain injured children, conferences were set up early in the project with consultants for the purpose of obtaining guidance from persons with personal experience. These consultants, whose names and professional affiliations are listed in Appendix B, were selected on a nationwide basis from the handful of agencies and institutions in other parts of the country that were known to be operating similar or related research programs. The consultants were brought in individually to observe the classroom, hold conferences with the principal participants, and to give advice regarding the feasibility and desirability of trying out certain procedures and techniques in the classroom instruction of brain injured children.

Classifying the Clinical Tutorial Techniques

During the course of the project, all available library sources in the area of teaching techniques for brain damaged children were searched, reviewed, and annotated. The principal reference sources were a handful of texts which had been written on the subject up to the time the project began and a few selected professional journals.

A theoretical framework was developed by Peter F. Merenda, Ph.D., a Research Consultant to the Rhode Island State Department of Education, for the purpose of classifying tutorial techniques for educating brain injured children in a system which might prove to be useful for developing techniques for group teaching. This phase of the project is reported separately as Appendix E.

CHAPTER V

ANALYSIS OF THE DATA AND FINDINGS

A. Classroom Techniques

1. Group Activity: It is only natural that in this project considerable attention was given to group activity, since the primary objective was to investigate the applicability of individual procedures to groups. In conducting such activity it was imperative to begin slowly with an assurance that each child was aware of what he was expected to do, then only gradually have each child develop the ability to choose his own activity. In the course of such instruction it was discovered, as perhaps expected, that some had great difficulty throughout the year in selecting an activity and had to be constantly told what to do. The principal group activity aside from group luncheon was the "listening time." During this period, "show and tell" activities involving weather and time concepts, visual discrimination, and auditory training were tried, each with varying degrees of success. The teacher soon discovered that she must constantly be aware of the specific limitations of each child, and accordingly, must set and abide by limits in the conduct of these activities.

B. Seat Work

The principal group work conducted with the class consisted of the regular seat work activities which normally take place in any classroom. These activities while similar to other classrooms had to be structured to eliminate confusing stimuli. Workbook ideas were used by the teacher, but not workbooks. Materials had to be teacher-prepared. While more than usual patience and direction on the part of the teacher was required, it was discovered that many of the techniques tried out were moderately effective. Some of the materials and techniques, however, were found to be either non-applicable or difficult to implement. For example, the use of the peg boards for seat work was quickly ruled out when the teacher discovered that, unlike the individual situation, the group situation promoted the proliferation of error. In all seat work the teacher had to structure for the elimination of the errors being made by the class as a group. In the usual tutorial situation, the use of peg boards has proved itself to be a useful technique - perhaps as the findings of this study show - because the teacher is constantly in a position to evaluate the child's performance and to either reinforce successful work or correct it. However, a majority of the techniques and materials used proved to be moderately successful. A number of examples follow:

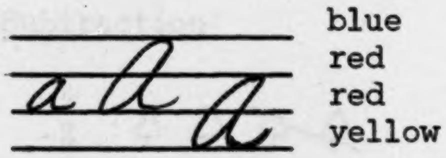
1. Writing: One of the serious obstacles to handwriting present in brain injured children is their inability to sense where one word ends and another begins.

In teaching the class of children to write, specific instructions were given to the students to first sound each word to be written orally, write it, then draw a vertical line to show the end of the word. The student was then instructed to place his finger to the edge of the vertical line he had just drawn at the end of the word and draw another vertical line, using the opposite side of his finger as the guide. This new vertical line now indicates to the student the beginning of the next word, and at the same time, provides for the proper spacing between words.

Example: The| |boy| |saw| |a| |cat| .

Additional techniques and materials were used in teaching the children to write at their desks, such as tracing words written by the teacher, writing words in relation to the visual image of an object, and tracing sandpaper letters just prior to writing the word on a piece of paper. Each of these proved to be somewhat effective just so long as the activity was limited to the writing of individual words and/or simple sentences of about four or five words for a period of ten to fifteen minutes at a time. Another effective technique involved the use of four colored lines with accompanying instructions to the students to draw lines from one color to another in the formation of the letters of the alphabet.

Example:



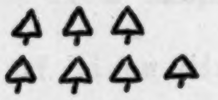
2. Reading Readiness: The first concentrated efforts in the planning for reading readiness with the class were directed toward auditory training and visual discrimination learning. In the area of auditory training, the class was instructed to associate the sound and name of a symbol, usually presented visually and/or kinesthetically, to the class by the teacher. The teacher would present an object or symbol to them on the blackboard or flannel board or hold it in her hands in front of the class. Each child also held the object, felt the letter or word to associate, and then sounded the word. In all situations emphasis was placed on the visual, auditory, and kinesthetic associations. Then she would say the name of the object or symbol being careful not to exaggerate the sounds, but rather, to have the class or individual child repeat them as she said them - clearly and distinctly. In time, through exercises such as this, the class gradually began to acquire a reasonable working vocabulary. A complementary exercise was to use pictures which had been cut out of reading readiness books as the stimuli for auditory response. The teacher would take a group of these cut-out pictures, show them to the class, and say, "Find the picture with the sound of 'm' at the beginning --------- of 't' at the end, etc." Then, after the pictures had been identified and the correct sounds made, the teacher would have each child in turn produce the sounds represented by the pictures in sequence from A to Z. This latter exercise proved to be extremely difficult for some of the children.

3. **Arithmetic**: The teaching of arithmetic was accomplished primarily through a combination of board work and seat work. The board work proved to be effective with one or two pupils at a time. Instrumental to the success of the instruction in arithmetic was the use of a variety of materials and equipment such as geometric designs, counting sticks, the abacus, blocks, and flannel board patterns. Emphasis was placed on associating groups with the correct number symbol. Some examples of the techniques employed in the teaching of arithmetic are as follows:

(1) Addition and subtraction learning was found to be enhanced through the use of flannel board materials. Geometric designs, e.g. ▱ △ ○ and concrete patterns, e.g. ducks, chicks, trees, etc., were used accordingly:

Example: Addition

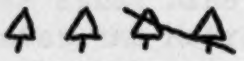
$$\begin{array}{r} 3 \\ +\underline{4} \\ 7 \end{array}$$



Instructions to student: "Write the number symbols to represent the picture, then find the number of trees and write the answer."

Subtraction

$$\begin{array}{r} 4 \\ -\underline{2} \\ 2 \end{array}$$



Instructions to student: "Find the number of trees, take away the number indicated, find the number remaining, and write your answer."

(2) The teaching of addition and subtraction as seat work was found to be enhanced through the use of paper which is lined vertically to indicate the tens, hundreds, and thousands columns.

Examples:

$$\begin{array}{r|c|c|} & & 5 \\ + & & 6 \\ \hline & 1 & 1 \end{array} \qquad \begin{array}{r|c|c|} & & 7 \\ + & & 3 \\ \hline & 1 & 0 \end{array}$$

$$\begin{array}{r|c|c|} & 1 & 8 \\ - & & 6 \\ \hline & 1 & 2 \end{array} \qquad \begin{array}{r|c|c|} & 2 & 0 \\ - & 1 & 5 \\ \hline & 0 & 5 \end{array}$$

Preparatory to the seat work described above, the concepts of tens, hundreds, etc. were developed for the students through the use of the abacus and number places visually presented on the blackboard or ruled paper. Practice exercises utilizing the technique described below proved to be effective in preparing the children for performing the operations required in addition and subtraction. All counting was done with the use of objects. Associations were constantly being made between number symbol and number of objects displayed.

Example:

1	2	3	4	5	6	7	8	9	10
									20
									30

1. Count by ones
2. Count by tens (groups of tens displayed)
3. Count by fives (groups of fives displayed)
4. Child encircles groups of fives or tens to indicate development of concept.

C. Evaluation of Test Performance

In September, 1959, when the first nine children were admitted to the class, an attempt was made to administer the Metropolitan Achievement Test Battery, Primary Battery I, to the students. The attempt was unsuccessful in that no scorable performance was recorded. At the beginning of the second term when the tenth child was admitted to the class, the same unsatisfactory results were obtained in the administration of the Metropolitan Achievement Test Battery to this student. This low level of performance or lack of self-application on the part of all the students in this special class is a good indicator of the degree to which their learning ability had been impeded prior to admission. In May, 1960, after the students had received several months of special class instruction as indicated in the foregoing pages, the same test battery was re-administered. This time, all students produced some degree of scorable performance. These results are reported in Table 1. It will be noted that while all children achieved grade equivalent scores below the norm for their chronological ages, the performance does represent a considerable gain over the pretest at which time no scorable performance was recorded. This gain in performance serves as an indicator of at least moderate effectiveness of the teaching techniques and classroom experiences which prevailed in the interim between testing. The low performance of student number ten is likely due to the fact that this is the child who was not admitted to the class until the beginning of the second term. It is significant to note, however, that even he showed some gains on educational achievement after only four months of instruction.

Table 1

Grade Equivalents on the Metropolitan Achievement Test Battery, Primary I, for Ten Brain Injured Children Administered May, 1960

Student	C.A.	Word Know.	Word. Dis.	Read	Arith.
1	7-8	1.6	1.6	1.2	1.4
2	8-0	2.2	2.1	1.9	2.5
3	8-9	2.5	2.4	2.2	2.2
4	7-4	1.6	1.7	1.1	1.5
5	8-6	1.6	1.6	1.5	1.1
6	7-11	1.6	1.5	1.1	1.5
7	9-8	1.8	1.9	1.7	2.2
8	8-4	1.7	1.6	1.5	1.6
9	7-6	1.7	1.3	1.2	1.3
10	7-5	1.2	1.4	1.5	<1.0

D. General Observations and Evaluations

Although it is apparent from the foregoing analysis and discussion that some positive learning outcomes resulted and that certain clinical tutorial techniques proved also to be effective in the classroom situation for brain injured children, this is not to imply that the study was an overwhelming success. Many of the techniques which were attempted did not work out. The children did learn, and some of them learned a great deal. R. B., perhaps the outstanding example of educational progress, could not write his own name when he came into the class. He could not even form individual letters. The teacher combined a variety of techniques for him - tracing, sandpaper letters, colored lines on writing paper - and by the end of the year, he was printing a very presentable manuscript and composing original simple sentences. However, not all her attempts were equally successful or successful at all.

The teacher did as much group work as possible, since this was consistent with the purposes and design of the study. She found a few areas, notably visual-perception and auditory-perception drill, in which group work proved to be profitable. For the most part, however, the learning problems were so individualized that she was forced to do much of her teaching in sub-groups numbering as few as two children. Most of the children functioned acceptably in their assigned sub-group, although the teacher observed that there were at least two who perhaps should have received strictly tutorial instruction. In reflection at the conclusion of the study, the teacher concluded, "Some of the demands I made on the children were unrealistic." These demands were based on a hypothesized potential that she later believed really doesn't exist in some of these children. A further reflection on the part of the teacher suggested that the class was perhaps too large. Ten brain injured children as selected for this

class in the same classroom appeared to be too many; eight was judged to be the maximum, and five the ideal size of the class.

Another problem which constantly plagued the teacher was that the disability in learning reported to her by the diagnostic staff as being primarily related to visual perceptual difficulty, proved to be much more than that when observed in the classroom. This problem led to great difficulty in setting up effective instructional procedures. The teacher continuously observed that multiple problems were present, e.g., auditory, motor, kinesthetic, etc., which confused the situation, and in the long run suggested that although some effective results were obtained in the study, the tutorial situation provides for the treatment of each child specifically in terms of the unique constellation of disabilities and impairments for each child. The tutorial approaches permit the teacher to relate to the individual problems of the child. This individuality escapes the teacher when she is trying to teach an entire class of students with such impairments. As the teacher analyzes more carefully what the individual problems are, she finds that it becomes impractical to try to accomplish too much in a classroom situation unless there is considerable homogeneity of symptoms or combination of symptoms. If the group is too heterogeneous, it becomes virtually impossible to produce substantial positive outcomes in the learning process.

CHAPTER VI

CONCLUSIONS AND IMPLICATIONS

On the basis of the findings of this study the following conclusions and implications appear tenable:

Certain clinical tutorial techniques can be adapted for group instruction of brain injured children. But there appears to be one critical reservation: The process of adaptation had to be individualized in so many instances that it is impossible to predict that the specific techniques that worked with brain injured Group "A" would also work with Group "B" or Group "C" or any group other than Group "A". Even within Group "A" the teacher concluded that techniques that worked with some children in a given learning situation would not necessarily work with the same children in a different learning situation. (Various techniques are described in the evaluation session summaries in Appendix D).

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Despite the shortcomings in attempting to apply individual techniques to a group of brain injured children with a variety of symptoms, definite educational progress was achieved in each case, thereby demonstrating the effectiveness of these techniques, at least to a minimum degree.

Ten students are undoubtedly too many for such a class, especially if they represent a heterogeneous collection of symptoms and behavioral disabilities which are likely to impede learning. A class size of between five to eight students would be less unwieldy and perhaps might produce better learning outcomes than resulted in this study. Desirable learning outcomes would also undoubtedly have been enhanced through the employment of a teacher's assistant in the conduct of the class.

In order to be able to handle a class of handicapped students who normally would be receiving individualized instruction, the classroom teacher should be aware of at least the following rules of thumb: (1) establish a sense of order in the classroom; (2) don't take anything for granted; (3) be prepared to improvise; and (4) find means of varying the routine. These are undoubtedly discoveries that any good teacher would make in short order, and therein lies one of the most important findings of the project - the qualities and abilities of the teacher are likely to be as important as the techniques - and perhaps, more important. The two are not independent, but are highly related; and positive outcomes, if forthcoming, are the results of how successful the teacher is in applying the techniques. If the teacher has what it takes, she will find ways of succeeding with the class. This is not to say that a good teacher cannot profit from some advance theoretical consideration of the problems she is likely to encounter and from familiarity with the techniques which may be available for dealing with the problems.

In retrospect, it is apparent that there were certain deficiencies in the structuring of the project. Some attempt should have been made to set up a control group. Much better provision should have been made for observing the classroom activity (e.g. one-way vision glass) and for recording observations. Persons associated with the project should probably have attempted at the outset to reach agreement on definition of key terms and study objectives. The classroom teacher should have been able to participate more fully in the evaluation sessions. These various inadequacies became obvious during the course of the project and was freely conceded by members of the staff (see particularly in Appendix D the summaries of the evaluation sessions of June 15, 1960 and November 30, 1960). The fact that they were not foreseen in advance is probably attributable to the novelty of the situation and a tendency on the part of the project staff to underestimate its complexity.

In the final analysis, however, it appears that the question of whether it is feasible to instruct brain injured children in a group has been answered in the affirmative but with very important qualifications:

1. Great care must be exercised in the selection of the children for the class to keep the range of learning problems as narrow as possible.

2. The size of the class must be kept small; ten is probably too many.

3. The teacher must be well trained, highly motivated, and possess great skill and patience in the handling of handicapped children.

4. There must be professional assistance available outside the classroom - a physician, physical therapist, psychologist, and social worker as a minimum.

5. There should probably be a full-time teacher's assistant in the classroom.

6. Selection criteria for grouping brain injured children should probably be based more on educational behavior than on medical diagnosis.

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APPENDIX A

Alphabetical List of Persons Associated With the Project

(Titles are those held at time of the Project)

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Philip O. Coakley, Ed.D. - Principal, Henry Barnard School, Rhode Island College

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Morris Botvin, M.D. - Chief, Department of Ophthalmology, Miriam Hospital and Associate Surgeon of Ophthalmology

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APPENDIX B

Consultants From Out-of-State

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Ruth Mallison, M.A. - Educational Therapist, New York City

Ruth M. Patterson - Director, Research Project #50, Columbus State School, Columbus, Ohio

APPENDIX C

The following pages contain summaries of reports on each of the children in the Special Class by the social worker, the teacher, and the physical therapist:

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Arthur A.	39
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Arthur A. - born September 23, 1952

Social Worker Notes: Mr. and Mrs. "A" were living with Mrs. "A's" parents in a very small bungalow in a crowded section of Providence. Mrs. "A" was convinced Arthur should be enrolled in the Special Class, but Mr. "A" wasn't so sure. Mrs. "A" was pregnant at the time.
September Summary: Mrs. "A" did not "show warmth towards Arthur in any of our visits but was concerned for herself and her condition."
October Summary: There was difficulty in getting Mrs. "A" to return a slip on Arthur's medication. "She thought Arthur was getting along well in class and was very happy, although she herself was miserable."
November-December Summary: Mrs. "A" had Arthur bring money instead of a lunch, which made it difficult for the teacher. Arthur began to look tired. It appeared that the grandparents showed great favoritism for Arthur's brother and did not like him.
Home Visit: Mr. "A" ran a nightclub which kept him away from the house from 10 A.M. until 1 or 2 A.M. "Mr. and Mrs. "A" had very sharp words regarding the parents and their domination of the children."
December Parents' Meeting: Mrs. "A" had had her baby and seemed much improved, both physically and mentally.
Interview at Henry Barnard School: Both parents came, but Mr. "A" took very little part and was "definitely threatened by the whole situation." Most of the interview dealt with Arthur's hyperactivity and ways of disciplining him. The problem of Arthur's swearing was discussed with Mrs. "A" blaming it on a neighbor boy. Mr. "A" said he had little time to spend with Arthur. "It was obvious there was no consistency or direction in any of Arthur's discipline at home" and "that the father was expecting material gifts to make up for the time and attention which he did not give to the children." Both parents readily admitted using bribes with the boy. They agreed to try to be more consistent in their discipline and the father to spend more time with his son. Arthur was the oldest of five children including the new baby.
March-April Summary: Arthur's hyperactivity continued to be a problem, but there were signs that Mrs. "A", at least, was handling discipline better. Mrs. "A" reported that often when her husband came home in the middle of the night, Arthur woke up and had coffee with him and then had trouble going back to sleep.
Final Summary: Mrs. Mullaney reported that by the end of the school year, Arthur was able to sit still longer, and his span of attention had increased.

Teacher Notes: "Arthur will hit another child if he feels he is not being watched."
October 7: "Arthur has shown a great deal of restlessness this week. The men who took them swimming said Arthur seemed afraid."
November 3: "Arthur seems to try, but he becomes noisy and agitated when anyone is in the room. He does his work. Wants everything he sees, but doesn't share too well."
November 5: "Arthur uses bottle tops for his arithmetic and looks at his rule for the number likeness. He does well, but he cannot do it without these aids. Loves to go to the punching bag."

November 18: "He looks very tired."
December 4: "Arthur couldn't swim this week; he was too naughty according to Mr. Russell. He is very noisy in the afternoon program."
Undated: "Has difficulty looking at a whole word--is distracted by odd characteristics or likenesses that are not too meaningful."
May Summary: "Arthur seems to have some aphasia. He knows what he wants to say but often does not say it the way he started--but can say it later. Same is true for reading numbers. His behavior has improved greatly--does his work and goes to whatever task is assigned to him or whichever one he chooses."

Physical Therapist Notes: "Arthur has found some difficulty in adjusting to the programs and pressures of the group setting...hyperkinetic...does not respond to affection. His character is built on poor powers in all areas, such as concentration, short attention, impulsiveness, irritability and variability. He is not physically aggressive but will verbalize his dislike for someone. He can, at times, be affectionate. He will seek attention to the point of being punished. His ability to play harmoniously or to wait his turn is below par. His performance, not his behavior, in tumbling, swimming, ice skating, etc., is very good. He shows he can learn and tries very hard. Has a low tolerance level in Arts and Crafts. Uses bad language...profanity that is not tolerated by anyone. Speaks of his father as someone who will give him anything he wants. Expressed some dislike of his younger brother. Has good eating habits, and he shares his food freely. In summary, this adult feels little progress has been made with Arthur in the group setting. Probably more progress could have been made in a smaller group or on an individual basis."

Jan A. - born December 18, 1952

Social Worker Notes:

September Summary: Mother showed "independence and efficiency" in arranging transportation to Henry Barnard School from home in West Warwick. Mother was working and was anxious for Jan to become involved in the afternoon program, to give her more time for her job. Social worker felt that "Mrs. "A" did not show much concern for Jan's welfare."

October Summary: There was some difficulty in getting Mrs. "A" to sign and return the medication form. Mr. and Mrs. "A" came to the parents' meeting and proved somewhat disruptive by making side comments to each other. They remained afterwards, and Mrs. "A" asked Mrs. Mullaney if Jan was "grumpy" in school. Mrs. Mullaney said, "No." Mr. "A" said, "She is at home." Both parents kept expressing concern about Jan's academic progress and her prospects for next year.

November-December Summary: In a phone conversation, Mrs. "A" seemed "very panicky" about Jan's academic shortcomings, mentioning her desire to keep up with her brother and her complete inability to do so. Mrs. "A" wouldn't let Jan go swimming during the winter for fear of her catching cold.

December Parents' Meeting: Both parents continued to show great anxiety over Jan's academic standing. In a phone conversation with the social worker a few days after the meeting, Mrs. "A" said she and her husband "felt they got satisfaction out of Dr. Novack's explanation of the necessity of these children not being put under pressure with the academic work, and Jan was already beginning to want to do some numbers at home."

Interview at Henry Barnard School: Mrs. "A" did most of the talking and commented many times on her firmness and strictness with the children. Mrs. "A" said Jan had no friends at home, probably because she could not do what other children did. "Many instances came up during the interview in which Jan's inability to use both hands seemed to be the center of the conversation, also her poor coordination." Both parents seemed to think Jan was dominant over her brother. "It was obvious that Jan is constantly seeking approval and that her mother has sensitivity regarding her appearance as a disabled child." The professional people did not feel satisfied with the interview.

Final Summary: At the final parents' meeting, both Mr. and Mrs. "A" said "they could see no academic progress for Jan." Mrs. "A" said Jan wished to read so badly, it made her feel sorry for her; and she wondered if "with her intellectual ability, whether she would ever be able to read." Dr. Novack at that point discussed "transferring of symbols" and said this was a problem for Jan and some others in the class in their approach to reading. Mr. and Mrs. "A" asked many questions about perseveration. They said they did believe Jan had gained confidence in herself during the year.

Teacher Notes: "Works quietly and well at games she chooses herself--matching games, puzzles. Makes no attempt to use her left hand at any time. If told, she uses it; but never on her own. Seems to enjoy the reading group...Has trouble finding which word comes first. Rarely talks; but when working alone with the teacher, she contributes ideas as to what something looks like."

September 29: "Does not use her left hand at the lunch table--just lets it hang by her side."
October 6: "Jan is contented to be by herself--she never asks to work with anyone--never writes anything more than she is told to do--but she goes over and over the same word."
November 6: "Jan loved the 'fishing game.' She used her other arm and hand for support and help many times. Her papers are improving."
December 14: "Uses her other hand much more without being told. Can now count number of blocks and tell how many."
Undated: "Her tracing, cutting, etc., have improved. She opens the napkins at lunchtime for everyone's place--this is her job--each one has something to do."
April: "Jan has been sharpening the pencils. It is very difficult, but she asks for help when necessary...Is beginning to sound words."
May Summary: "Jan is still a quiet, rather inactive child, but she participates well in activities. Is determined to finish her work but takes longer than the other children to complete tasks. Works well but slowly...Is extremely anxious to please and needs a great deal of praise."

Physical Therapist Notes: "Jan is an attractive little girl, very quiet and neat. She has never been troublesome and has displayed her good manners throughout the year. She seems to be somewhat self-conscious about her handicap... Seldom asserts herself, speaking only when spoken to. She enjoys helping with small things and is pleased with some responsibility...dislikes roughness...has a good attention span, is tolerant, very patient. She enjoys winning. Swimming and ice skating--again, her performance was limited. She would look forward to going, anyway, and at times, she would be singing."

Diane B. - born October 15, 1951

Social Worker Notes:

September Summary: Mrs. "B" "was so very anxious for Diane to do well and be happy in the class." She reported that Diane was "very happy at school, fond of the teacher." Mrs. "B" was elected Room Mother and was very faithful in notifying other parents of meetings.

October Parents' Meeting: "Both Mr. and Mrs. "B" were alert and interested... asked questions about discipline." Mrs. "B" "commented on Diane's new ability to play with the other children and how much greater it had been this year." Both parents spoke frankly about Diane's problems such as her inability to tie her shoes and to draw.

November-December Summary: "Although Mrs. "B" seems less tense about Diane and about her future and there is no question but that she seems more relaxed in seeing Diane's progress, there is very little evidence of any increase in warmth and acceptance toward Diane on her part." (Mrs. "B" was a graduate of the University of Rhode Island in home economics.)

February Parents' Interview: Mr. "B" said "the thing that pleased him so much was that instead of coming in when things didn't go well and having a tantrum, Diane came in and went very quietly to her room and played without making any difficulty of any kind." Mrs. "B" spoke enthusiastically of Diane's friendship with Jan and said this was the first year Diane had "been able to stand up" to her sister, Barbara. Both parents agreed one of Diane's big problems was getting dressed to go to school. Mrs. "B" expressed relief at not feeling under the necessity of helping Diane with her homework.

Teacher Notes: "Feels she can't do most things...likes to put link letters to-gether--not in sequence, just linking them. Seems to enjoy writing on the chart--she does well at it. Becomes excited in using a reading book, looking at the pictures and talking about inconsequential things. Talks about Heidi (her dog) more than anyone or anything else. Was the only child who showed any fear at the fire drill."

September 24: "Could not assemble color cone."

September 25: "She and Jan played 'house' at noon--they seemed to play very well to-gether."

October 9: "Can count, but has difficulty counting objects--loses count when counting objects. Can read story from story chart."

October 19: "Reconstructed story perfectly. Knows all the words--sometimes has a little difficulty with 'have.'"

October 20: "Mr. Russell described Diane as a frightened little girl. Didn't want to go swimming--afraid of pools. Cannot copy story."

November 10: "A paper under Diane's writing paper seems to help her. It keeps the pencil from moving too easily."

November 12: "Seems to keep her letters closer if the paper is one-half the normal size."

November 18: "Is having trouble with counter-clockwise movement. We are concentrating on this area. Tried finger painting with fist and whole hand for counter-clockwise help--could do it and enjoyed it."

December 4: "She is now told to 'push hard' on her pencil. It seems to help her in her writing."
Undated: "After a vacation from school, she seems to talk incoherently from one subject to another, no continuity--possibly feeling the need to stabilize her change of environment through language (?)...Needs to point to each word in reading--or she makes up the story. Is impulsive in her actions and writing. Time sequence difficult for her."
March 17: "Have noticed that she becomes very active when visitors come into the room."
May Summary: "Diane works quietly and finishes her work. She has shown a great deal of growth. The psychologist who tried to test her a year ago in East Providence visited the class and said she was amazed to see Diane concentrate on her paper and do her work so well for such a long period of time."

Physical Therapist Notes: "Diane is a very frail girl who is fearful and has poor coordination along with a bizarre manner. Her ability to learn is below par...She was never in any difficulty and always complied with requests. Her relationship with the group was limited. Although she very seldom had difficulty, she remained close only to Jan. She lost in any competitive game, not because of her inability, but simply because she did not wish to win. She rejected any encouragement from me but rather, interpreted it as correction."

Ricky B. - born June 10, 1952

Social Worker Notes:

August Home Visit: The "B's" live in an attractive home in Cranston. While social worker was interviewing at home in August, Mrs. "B" "made several attempts to persuade Ricky to leave the room, but he merely went around the corner and sat on the floor." She appeared "tense and high strung."

September Summary: Mrs. "B" was reluctant to leave Henry Barnard School the first morning she brought Ricky to class, explained that he had lost his breakfast. Sometimes when the social worker phoned, Mrs. "B" seemed actually alarmed for fear Ricky was not doing well in school.

October Summary: Mr. and Mrs. "B" resisted a request from the school for permission for Ricky to have his picture taken for any publicity use. "She felt they needed to protect him against any public feeling that he might be different from other children." Her anxiety began to lessen in October, and she reported that Ricky was getting along better with the neighborhood children.

October Parents' Meeting: Mr. and Mrs. "B" attended but took little part. She did say that Ricky was happy in school.

December Parents' Meeting: Mrs. "B" attended alone and took more part than in October. She told how she was handling both academic and disciplinary problems at home, which was mainly to do nothing about them. (There was mention of a brother.)

January Summary: In a phone conversation, Mrs. "B" "often used the word 'eager' in indicating Ricky's new attitude, also indicated that he had a persistence he had not shown before.

January Parents' Interview: The "B's" expressed concern about Ricky's inability to face up to any new situation. Dr. Novack explained that Ricky had problems in organizing and required a lot of repetitive work, that it was not a matter of intelligence "but a lack of concepts in space." Mr. "B" spoke of Ricky's new ability to draw, but he showed anxiety about Rick's chances for future progress. He said he "just wanted assurance that Ricky would be able to hold a job and support himself as an adult." (He himself owned some kind of shop, possibly jewelry manufacturing.)

Final Summary: Mrs. "B" "is the one parent who has profited the most from having her youngster in the class," the social worker wrote. At the last meeting, however, she had for the first time, expressed concern over Ricky's perseveration. Dr. Novack assured her this was constantly a problem for most of the parents and explained that it was a mark of the children's "terrible frustration."

Teacher Notes: "Apprehensive about not being able to do work, puzzles. Relaxed after being told teacher would help him. Has no definite handedness in that he changes from one to the other. Shows very little interest in reading but comes with the group and listens. Needs to be given something to do--cannot choose. Asks to have his shoe tied several times in a morning. When told that it is tied, he says he wants a double knot. Cannot find words that look alike on the reading chart. Asks to wash his hands often during the day--says he gets up at night to wash them."

September 25: "Seemed apprehensive during the writing period but was told teacher would help him, and he could go over his name. He relaxed and said he liked it...Wrote on the blackboard today--doing tracing."
September 29: "Can read the story but doesn't know the words individually."
October 7: "Can still read story. Doesn't know individual words but can find the same word as the one in his hands without any difficulty when asked to put the story to-gether. Yesterday and today he has laughed quite loudly several times. He didn't stop until told to do so."
November 3: "Ricky tried very hard with his work, but he does not show much improvement. He could not cut and paste the words today."
November 6: "In making the letter 'M', I said 'up, down, up, down' several times as I helped him do it.
November 9: "Had not forgotten how to make the 'M'--said each step as he made it..."
November 18: "He worked on his paper very well today...He seems to be getting the concept of a 'little' and a 'lot', but he is never sure. I tried him on finger painting today for movements of clockwise and counter-clockwise, and he did very well..."
December 14: "He can now do the color cone; but when he does make a mistake, he cannot go back and correct it...If he starts again, there isn't or doesn't seem to be as much confusion..."
January 8: "He becomes very confused when cutting something. He puts his hand to his head and just looks stunned..."
January 18: "He doesn't seem to be able to follow directions...Body concept (?) a great problem to him. Is beginning to know top, bottom, under. Eats as though sense of taste has not developed."
May Summary: "Richard has shown a great improvement in all areas; social, physical, and academic. He has a drive to succeed and do well--is not satisfied wit his work unless he thinks it is good."

Physical Therapist Notes: "Ricky is a happy boy who appears to enjoy this program very much...has always shown enthusiasm...always complied with this adult's requests. He will tend to fall into a vacant trance sometimes. Seems to be unable to follow simple directions even though they are repeated to him several times. His retention is often lost from day to day, and his ability to coordinate is poor. He plays fair and shies away from roughness. In active games, he finds it difficult to compete against the more capable. He tries to perform but cannot comprehend as readily, so, therefore, is many times, the scapegoat and is severely criticized. He was one of the few who could ride the two-wheel bicycle, however. In Arts and Crafts, he is the slowest. Swimming and ice skating--his ability seemed more keen. In summary, some progress has been made, but additional help on an individual basis would be more advantageous rather than with a group setting."

Frank F. - born August 15, 1951

Social Worker Notes: In September, Mrs. "F" who had recently undergone surgery and was not well, "reported with great enthusiasm on Frank's reaction to his new class and his happiness in it." He had even offered to help his brother read and was playing better than in the past. In October, Mrs. "F" went to work. She came to the parents' meeting alone that month--Mr. "F" was working. She spoke out readily in the meeting--"All of Mrs. "F's" comments showed Frank's need for status in the family and his need for his mother's approval." She said Frank was fighting more now that he was happier.
November-December Summary: Mrs. "F" was working from 8 to 4:30 P.M., and Mr. "F", who was driving a trailer truck, left home at 5 P.M. and got home at 3 A.M. She expressed concern over Frank's hyperactivity but said he was greatly improved over the year before.
December Parents' Meeting: Mrs. "F" talked a lot about her personal problems with Frank's discipline, told of his growing interest in physical competitive games, including football, showed great pride in report of his persistence in diving underwater.
January Summary: Mrs. "F" has six children. Her sister lives upstairs and has seven. Mrs. "F" says "the house is always in a turmoil."
January Parents' Inverview: Both parents came, and Mr. "F" appeared "threatened by the situation." Mrs. "F" was concerned about Frank's many problems. Neither parent showed any interest in his academic work. She talked about his insistence on eating before going to Communion, about his "messing in his pants." Mr. "F" said Frank will never take the blame for anything but admitted the other boys in the family are the same. Frank's two great improvements, according to Mrs. "F", were going to bed better and excellent manners. "The father was inclined to belittle this improvement." The staff, in discussion after the interview, agreed that Mrs. "F" needed a great deal of help.
February-March Summary: Frank showed considerable regression during this period. There appeared to be an obvious relationship between his condition and the arrival in the class of Ernest "H", a boy with similar abilities in academics and athletics who "challenged Frank's position as leader of the class." About this time, Mrs. "F" lost her job and was home all day, which made her unhappy. Then she became ill--was told she might need a hysterectomy. Home visits were "extremely unsatisfactory...the children were unkempt and in constant confusion." She was greatly upset about Frank's "dirty pants," with his loss of willingness to fight for himself, with his "lying all the time." "All of Mrs. "F's" children are attractive. They all have sparkling personalities and know how to get around their mother, which she actually seems to enjoy. In the home on all occasions, Mrs. "F" clearly shows her resentment of Frank in her treatment of him...She has no hesitancy about embarrassing and belittling him. Frank seems to take his mother's attitude for granted and does not seem resentful."
Final Summary: At a staff conference in April, it was agreed that "it was necessary to solve Mrs. "F's" problems and the feeling was that Frank's would be solved simultaneously." Shortly thereafter, Mrs. Kaldis, a Family Service social worker, began to work with Mrs. "F", who was cooperative. Mrs. "F" told the school social worker she thought Frank had improved academically a great deal during the year, especially in arithmetic.

Teacher Notes: "Tries to please."
October 7: "Frank has shown signs of restlessness--doesn't stay at anything this week--walks around the room. Up to now he has not shown these traits. Today, he whistled out loud two or three times."
October 20: "Frank is acquiring good work habits. He reverts once in awhile to tapping his feet."
November 3: "Frank's papers are improving. He is less restless."
November 6: "Work habits have improved a great deal. He goes about his tasks and finds what he wants to do only after his papers are completed, and they are all well done."
February 1: "Frank seemed very disturbed this morning. His work wasn't done as well as usual."
March: "Has Ernest made Frank feel insecure? Ernest excels in the afternoon program. Frank used to excel...Mother says if there is any chance that Frank would hurt any of the other children, she would 'put him away.' Wants to go back to Bradley for help..."
April 1: "Frank has started to eat in the cafeteria--sits with junior high boys--likes it. Appears to be under less strain."
May Summary: "Frank seems to be happy. But I find he is a child who has developed no set patterns and could easily be led and easily disrupted. He does not seem to be a leader. He seems to still lack stability, but his academic work has improved. He asked to return to manuscript writing--cursive was not too successful for him..."

Physical Therapist Notes: "Frank appears to be a very insecure boy...seeks praise and affection for himself constantly. He works for perfection and tries in all areas to please and behave himself. At first, he cried for his mother, but now scarcely mentions her. There was a notable change in his relationship with his peers. He assumed the role of leader at first, being protective. Later and since Ernest joined the group, he declines his role as leader, dislikes competition and has become more dependent than earlier. He has also become very critical of the individuals in the group. His performance in active games is very good. He shows he can learn and enjoys learning a new game. His ability in Arts and Crafts is good, but his work must be first rate or he becomes frustrated. His trustworthiness is questionable. He eats much more than his peers. He has to be watched without his knowing as he tries to confiscate as much food from his peers as he can..."

Mario F. - born August 5, 1950

Social Worker Notes:
Home Visit: The family lives on a busy highway in a semi-rural area near the Warwick airport...an excellent place for the children to play. Mrs. "F" was about five months pregnant and not feeling well.
September Summary: Mrs. "F" lost her baby and was very upset. There was some difficulty about transportation for Mario, but a cooperative arrangement was worked out with the "B's" in Cranston. Later, her brother, who lived next door, agreed to transport Mario, Ricky "B" and Kenny "L" for $25.00 per week. This arrangement worked well.
October Parents' Meeting: Mr. and Mrs. "F" were late. He took no part, but "she showed the greatest amount of acceptance of any of the parents there and also was completely uninhibited in discussing her problems." She said Mario tells other children he is brain injured. He has a brother, Peter. Once, she said, she found Mario smoking a cigarette. At first, she was upset but then decided it was a normal problem.
November-December Summary: Mrs. "F" had a bad fall, became depressed with her bad luck...said she disciplined the boys by refusing them supper and talking with her husband in Italian. She said Mario was very happy in class and had become very fond of Jan "A".
December Parents' Meeting: Mrs. "F" came alone. Reported her pleasure with the fact that Mario wanted to help Peter with his homework.
January Summary: Mrs. "F's" brother had quit driving, because he hadn't been paid; and Mrs. "F" herself was driving. She reported some confusion about financial help from the United Cerebral Palsy Association.
January Parents' Interview: Both parents came, but Mr. "F" made few comments. He exhibited affection for wife and love for Mario. They said Mario had a bad headache occasionally. Mrs. "F" said Mario likes to dance and loves to sing and gets along "exceptionally well" with other children. Both parents thought he had improved a lot, was "now a happy child," was doing better in his school work.
Final Summary: At the May parents' meeting, Mrs. "F" said she "felt Mario had progressed considerably during the year, mostly in his confidence in himself but also in his academic ability." She "felt it was one of the advantages of the class that the children were in such pleasant surroundings and took such pride in going to the school."

Teacher Notes: "Worked with the Rigajig--did well. Won the ring toss game by scoring one point. Took part in the reading. Can fix the chairs in a reading group...He has some difficulty in deciding what to do and does not stay at anything for any length of time. Has difficulty in telling how many objects are in a group when the number gets to five or above. I am now telling him what he is to do when he finishes his work."
October 14: "He has now chosen what he wants to do for two days. The first day, he went to the plasticine--today he chose to color. He seems to be acquiring better work habits."

November 3: "He is finishing his papers, and there is improvement in them..."
November 6: "One day Mario seems to 'feel' the spacing of word and letters, and the next day he will revert to his old style or leave great spaces between words. He wanted to play in the doll house today with Ricky and Kenny..."
November 25: "On his number paper, he writes 18 for 81, etc."
December 8: "He isn't sure of the letters in his name. He is doing much better, but he still has to look at his name card..."
December 11: "Can now write his name without his name card--have encouraged him to say the letters as he writes them."
Undated: "I wonder if having his mother drive Kenny and Ricky is good for him? They 'tell about him,' etc. Mario and his brother seem to have a good relationship from the things Mario tells me."
March 10: "Mario cried today--said his head hurt..."
May Summary: "Still has trouble with reversals--seems immature--has not shown as much growth as many of the others."

Physical Therapist Notes: "Mario is a very happy youngster who has adjusted nicely with this program...has shown tremendous enthusiasm every day. He is very obedient and has never become a problem. He becomes very tired if active for only a short time. Many times he has broken out in large red blots, covering his arms and face. Does not become frustrated easily, and his attention span and alertness are remarkable. Volunteers for chores around the class. He is well liked by his peers and plays with all of them fairly. He is a leader, and his ability to learn new games is good. In Arts and Crafts, he is very clever. He does well working on his own and very often will help other children to finish. In active games, he participates and had a good attention span. Loved the identification games. He won often as his ability to think seemed above the others. In summary, this boy has progressed well in the group."

Ernest H. - born December 8, 1951

Social Worker Notes: Ernest was admitted to the Special Education Class at mid-year. He had been referred in the fall; but it had been impossible for the staff to evaluate him, because he was too much under the effect of medication. His mother, an intense woman, was very anxious about his academic failure and inability to get along with neighborhood children. The family had financial problems, but their home was neat and showed evidence of Mr. "H's" artistic talent. About the time Ernest entered the class, Mr. "H" obtained a job selling portraits. Mrs. "H" thought that Ernest showed more progress in his first month in the special class than he had in the previous year. His home behavior had improved, too, she said. Mr. "H" appeared to take a real interest in the boy.

Parents' Interview: Both showed a great deal of interest and enthusiasm in looking at his papers. Mrs. "H", who had been told that he was retarded, was surprised to find that he had an average I. Q. Mr. "H" expressed the hope he would be able to support himself when he grew up. Mrs. Mullaney reported that "Ernest contributed to the group situation and that, although he was still very quiet, he was well liked by the other children." Mrs. "H" showed evidence of an over-protective attitude towards the boy. Both parents expressed concern about Ernest's "explosive" behavior.

Fathers' Night: The "H's" both came and showed considerable interest in Mrs. Mullaney's demonstration of the materials used by the class.

Final Summary: Mrs. "H" saw definite improvements in Ernest's ability to get along with the neighborhood children and with his sisters. The social worker commented that "it is quite obvious that many of his problems stem from the poor relationship with his sisters who do very well in academic things and are orderly youngsters." Mrs. "H" was very enthusiastic about Ernest's speech improvement. She noted that "he is still not a very good sport in competitive things."

Teacher Notes: "Ernest entered school at the beginning of the second term. He adjusted very well socially, seeming to fit right into the class. Teacher did not realize that talking had been a great problem to him, although it was very apparent that he had a speech handicap. He talked to teacher and the other children freely in group participation and at lunch, etc. Teacher was surprised to learn that he had stopped talking at home and school before coming to this class. He had difficulty writing but seemed to learn very quickly. Had difficulty spacing words. Mother and father were very surprised at his work when they visited after about six weeks."

Physical Therapist Notes: "Ernest is a boy who behaves well only when under supervision...Will inflict injuries upon his peers if not watched closely... much too playful at times. He will attempt most anything but will remain at it a very short time. He will then start to wander around the classroom, provoking others to quit what they are doing and join him in fooling and horseplay. He has never offered any help as do the others. He has a good relationship with the children in the group, because he makes friends quite easily. Ability in

Arts and Crafts is fair. He enjoys making projects but is slow to grasp, showing some retardation. When it comes time to face a small problem, he then quits rather than go on. He wants to lead and dominate and can become sulky if not given his own way. He has no objection to losing and enjoys winning. This is where he shows some maturity."

Wayne H. - born May 11, 1952

Social Worker Notes:
September Summary: Social worker had trouble finding Mrs. "H" at home--her mother was very ill, and she spent a great deal of time there. On the phone, she said Wayne was enjoying the special class; but she saw little change in his reactions to home situation.
October-December Summary: Mrs. "H", because of financial needs, had to take housework jobs. She was under a great deal of tension and extremely anxious about Wayne. During this time Wayne was put on medication, but both mother and teacher agreed they could see very little improvement in him. Mrs. "H" agreed to come to the December parents' meeting, but said Mr. "H" was busy making Christmas wreathes and wouldn't be able to come.
December Parents' Meeting: Mrs. "H" seemed interested; but this was her first meeting, and she took little part. At the end, she said she had got a lot out of it and would try to get her husband to come to the next meeting.
January Summary: Wayne had his eyes examined by Dr. Tramonti, was found to have a high degree of astigmatism and a need for glasses. The doctor thought he probably could not see the blackboard. Mrs. "H" reported during this period that Wayne had gone two or three weeks without wetting the bed, when, up until then, he had been wetting every night.
Mr. "H's" Interview: Mr. "H" had a maimed hand and was self-conscious about it. Tense at first, he soon relaxed. He explained that he tended to be more lenient with Wayne than with his other children, because Wayne had had to spend his first three years in an orphanage. Both parents were confident that getting glasses would help solve Wayne's problems.
Final Summary: Because of the circumstances--Mrs. "H" out working and no phone at home--there was not much communication with them during the year. They wanted Wayne to continue a second year but couldn't pay the $200.00 tuition. (He was given a scholarship and did continue.)

Teacher Notes: "Came in after school started--adjusted well. Can't decide what he wants to do...noisy...talks out loud...gets excited when he makes a mistake."
October 7: "Wayne makes no attempt at reading chart--just shakes his head, 'Can't do it.'
October 9: "Wayne moves constantly...refused to take papers from the children who were giving them out."
October 14: "Wayne was very active today. He came in, dropped his jacket on the floor, ran to his seat, and could not settle on anything. Didn't want to eat his lunch, but he finally did. Tried hard to be quiet but just couldn't seem to. I suggested that maybe he would like to move his desk over to the other side of the room. He did, and it seemed to have some slight effect on him--but only slight..."
October 19: "Wayne is back in the group. He thought he would like to sit in his own seat."
October 26: "Today he asked me to please turn off the lights and close the blinds--the light was giving him an 'awful headache.'"

October 27: "He played in the doll corner today with Jan, Diane, and Bobby. Had a very good time--was well adjusted and made plans for continuation of play tomorrow."
November 9: "This was his first day on medication (Dexedrine). He didn't show any marked change in behavior...Is at his best when finding the 'baby' and playing house."
November 18: "He often comes to me and says 'I'm sorry,' which is an improvement. When he first came in, he would become very aggressive if spoken to even in a very casual manner about not doing something."
November 23: "Wayne's eyes seem to give him trouble. He has to be near the board. He squints a great deal."
January 15: "...Seems to get a great deal of satisfaction and enjoyment at the Rigajig or building blocks. Good imagination. Has difficulty with sequence--before, after, etc. Concentrates and says 'I love this' when working in group on the number trays."
May Summary: "Wayne's school work has improved a great deal. He still has a more than normal amount of activity. Has difficulty with number but is very anxious to learn."

Physical Therapist Notes: "Wayne is a boy who has gained tremendously since the beginning of the year. He is still the anxious active type but to a much smaller degree. His frustration point and tolerance of group pressures are very much for the better. He seems to have channeled much of his energy into the activities rather than exploding as before...With plenty of control and firmness, he responds quite well. May have been deprived of things, more so than his fellow peers. He resists sharing or giving anything to them. In active games, Wayne does very well. Swimming and ice skating were favorites along with the Crafts program. He tried hard; did fairly well in learning the basic principles of both. His attention was easily lost if anyone entered the room or if difficulty from another peer arose. Will try to win over the other children's choice food by promising to be their friends, etc. Needs at least half an hour to settle down after active games. This adult feels that Wayne has progressed steadily this year..."

Kenneth L. - born May 10, 1952

Social Worker Notes:
September Summary: Kenny was late starting in the class because of difficulties his mother had in arranging transportation for him. It was finally agreed that he would be picked up by Mario "F's" uncle. Kenny had had orthopedic surgery during the summer.
October Summary: Mario's uncle and Mrs. Mullaney both reported that Kenny seemed very tired. He fell every morning when he ran from the car to the school building.
Parents' Meeting: Mrs. "L" listened to the discussion attentively but "showed very little reaction one way or the other to those questions which dealt with the academic work of the children or with matters of discipline."
December Parents' Meeting: Mrs. "L" commented that Kenny was showing more curiosity than previously; had seen a picture of a volcano and asked her to explain it to him. She said Kenny and his sister were allowed to discuss what they wanted for Christmas until Thanksgiving, but after that, weren't allowed to change their minds.
January Parents' Interview: Mrs. "L" said she had noted an improvement in his writing and was pleased with his ability to do arithmetic problems in his head. She said he wrote letters voluntarily to his father who was overseas. Kenny's up and down periods, which Mrs. Mullaney had noted, were undoubtedly related to her own periods of depression, Mrs. "L" said. She mentioned that he was falling down a lot at home, and Dr. Novack suggested that perhaps she was setting somewhat too fast a pace for him. There was some discussion of Kenny's need to have status in his mother's eyes and not be made to feel competitive with his father--'take his Daddy's place.' Mrs. "L" showed resentment at the grandmother's 'babying' of Kenny...said "he will not be babied as an adult, and I do not think he should be now."
Final Summary: Kenny showed considerable improvement in ability to get around but was still falling some at end of year. Mr. "L" returned home from overseas and got along very well with Kenny. (Mrs. "L" had previously reported there had been no bond of affection between father and son.) Mrs. "L" thought Kenny's "greatest gain was his new confidence which he had developed during the year and his ability to play well with other children. She felt she had made considerable progress in her relationship to Kenny which had helped in creating this confidence in him."

Teacher Notes: "Had difficulty telling number of objects in a group of four or five. Was very pleased with his writing...likes to go to the plasticine table."
October 6: "Can read and reconstruct reading story--knows each word individually."
October 9: "Kenny was very tired today--couldn't finish his work."
November 9: "He relies on the bottle tops as an aid in arithmetic...He is slower finishing his work than any of the others."
November 18: "Kenny has a lot of difficulty with arithmetic. He seems to become confused and is still having trouble with combinations...Still has trouble holding his pencil in correct position."

April: "At times he is very immature. He dreams--has to be told many times to finish his work. He is big for his age."
May Summary: "Kenny does well but is easily distracted. Is not critical of his own work. Thinks what he does is Good."

Physical Therapist Notes: "Kenny is a very cheerful and likeable boy who fits into this group setting comfortably. Although his physical handicap slows him down and he tires easily, he tries very hard to compete against the others and holds his own in doing so. His retention and ability to learn and the resulting work are satisfactory...Enjoys doing favors and is fairly neat personally. Is a good leader, has imagination. He is fond of Arts and Crafts and does well in this area. He is not easily satisfied with the finished result unless it is quite good. Skating proved a hardship as he fell many times but declined use of the chair. Later in the year, he would blame someone else when he did fall, claiming he had been pushed. This was not always the truth..."

Robert T. - born November 22, 1952

Social Worker Notes: Mrs. "T" thought Bobby was very happy in his new class and "seemed extremely well-adjusted this year in playing with the neighborhood children."
October Summary: Mrs. "T" was anxious to learn from the teacher how she could help Bobby at home. She and Mr. "T" attended the parents' meeting. Both told the social worker after the meeting that it was now "so much easier" for them to get along with Bobby and that he was getting along better in every other situation out of school.
November-December Summary: Bobby was now talking but was still very active and occasionally destructive in his play.
December Parents' Meeting: Mrs. "T" related an incident in which she had shown a visitor to the home a numbers paper Bobby had done at home in which he had taken pride. But he became very angry when it was shown to the visitor, grabbed and crumpled the paper and ran away crying. Dr. Novack explained that these children often had a feeling of inadequacy about their work.
January Parents' Interview: Mr. "T" said his main concern was "that Bob is able to go out and earn a living and take care of himself as an adult." Mrs. "T" indicated her husband was not patient with Bobby at home and expected too much of him. In a discussion of Bobby's play habits, Mrs. "T" said: "Bobby has no imagination. Everything has to be real for him to be interested in playing." Dr. Novack suggested that Bobby's problem with visual perception probably accounted for his inability to play checkers well, a failing that had somewhat irritated Mr. "T".
Final Summary: At the final parents' meeting, Mrs. "T" complimented the teacher on her idea of having the children share their food at lunchtime. She thought this had taught them a lot. Both parents reported Bobby had been speaking more at home but never told anything about the class. They thought his greatest advance had been in his ability to play in the neighborhood.

Teacher Notes: "Doesn't make any attempt to form his words--grunts or motions. Works well at puzzles...At ring toss he just throws at random--landing nowhere near the clown. Had trouble catching the large ball. Does well at the reading group...Writes with his arm off the desk. Does not seem to feel or know that the desk will help him in writing. Works well by himself. Likes to paint... Doesn't seem to be able to tell the number of objects in a group. Makes no attempt at the reading charts."
November 3: "Bobby tries to say the reading words--sometimes he shakes his head and says, 'Don't know'--but when I say,'Yes, you do, it's the big girl in the story, who is it?'--he will try to say the name."
November 9: "He talks much more. Counts in the group which he said he couldn't do before, and says his words. Gets along well with all the children."
November 19: "At first, you would think he did not know the names of the letters. He doesn't say many, and you feel that he doesn't know them; but if you put some on a table and tell him to find B, find T, etc., he can do it."
December 14: "His writing has improved. There is little or no perseveration now. If he is 'stuck,' he asks for help, such as with the letter S. Seems to talk more. Never seems to say 'I can't' or 'No' anymore."

April: "Number work difficult for Bobby...Wants to read; never wants to miss his turn--has difficulty but seems to understand."
May Summary: "Bobby talks freely to other children and is somehow understood by them...He still takes a long time to write his papers, but we only have him do one or two lines of the story."

Physical Therapist Notes: "Robert, to say the least, was a pleasure to work with. He always carried a smile and seemed happy-go-lucky---The biggest difficulty with Robert was expressing himself...Another difficulty was his tattling on his peers. He had no tolerance for roughness or for anything going wrong and would relate this to me, naming whoever he would feel was responsible. He liked free easy play and would play with anyone who was not rough. At times, he appeared to harbor some jealousy. In Arts and Crafts, he could think ahead of the others. He usually was first to complete his project. He worked neatly and became a great help to those needing assistance. He enjoyed such things as climbing, running or kickball but wanted no type of game requiring bodily contact. Identification games was one area where he did not fare too well. There seemed to be a question in my mind as to whether he understood, for he would often say, 'Pass me.' This is typical of his sentences, it may be noted here. They usually consisted of two words."

APPENDIX D

Summaries of Evaluation Sessions and Interviews with Consultants

From October, 1959 through November, 1960, with the exception of July, August, and September, 1960, evaluation sessions were held monthly in connection with the Special Class for brain injured children at the Henry Barnard School. Dr. Dehhoff usually served as moderator. Attendance varied somewhat from session to session, but generally there were representatives of the Rhode Island State Department of Education, the Meeting Street School, and the Emma Pendleton Bradley Hospital.

The first three sessions were devoted to detailed examination and discussion of individual children in the Special Class. Thereafter, most sessions featured a visiting consultant. The sessions of June 15 and November 30, 1960, were staff critiques of the Special Class in terms of general observations and conclusions. In addition, there were two small-group interviews in April, 1960 and two more in October, 1960 with visiting consultants.

A transcript was made of the discussions at these several evaluation sessions and interviews. In Appendix D, an attempt has been made to summarize, through a combination of paraphrase and direct quotation, the most relevant portions of the transcripts. The summaries are presented in chronological order as follows:

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Summary of Evaluation Session of October 28, 1959

The subject for discussion was Kenneth "L", who had undergone orthopedic surgery the previous June. The surgeon, Dr. Silver, was present. Dr. Denhoff noted that there were some emotional problems related to the father's prolonged absences from home. Kenneth's performance problems included poor general coordination and reading and writing deficiencies. Dr. Mora expressed the opinion that "this child has to be helped individually and not in a group--to accept himself, with his difficulties, and to learn to function in a group...The child accepting himself will have a lot to do with it. There is also a lot of work to be done with the family."

Dr. Denhoff noted that the diagnostic statement on Kenny referred to "visual perception and eye-hand coordination problems." He said such terms need more definition.

Dr. Lipsitt: "I would stress the necessity in work of this sort for developing norms--testing normal children at the same time. The specific facts on this child would be worthless unless we had studied and worked with normal children before to let us know how Kenny related..."

Dr. Novack asked why Kenny writes vertically rather than horizontally. "Is it visual motor difficulty?"

Dr. Botvin: "Cases of this type I have seen in the office have been primarily in children whom we would call normal, and they always straighten out by themselves. There hasn't been any special teaching of the youngsters; and after awhile, they learn they are writing backwards and will write correctly."

After a brief discussion of "mirror writing," Mrs. Mullaney said, "When Kenny comes in, he hangs up his coat and hat, makes his way to his chair very well, and goes right to work. He does the work with a great deal of effort. When I get to him, he may have half or none of his "paper" written and says that he is so tired--he looks and acts so. I tell him to do as much as he can. He doesn't get up and go to another activity, but plugs away at it. Many times I have seen him too tired to lift his paper. Today, he did finish his paper."

At the end of the session, Dr. Denhoff observed that "Mrs. Mullaney feels that listening to the problem being talked out is very enlightening."

Summary of Evaluation Session of November 25, 1959

The subject for discussion was Robert "T", who had had virtually no speech since a severe illness at the age of fifteen months. He had a history of epileptic seizures, but these had been brought under control. His medical history was outlined by Dr. Laufer. Mrs. Langdon said that at Meeting Street School, he was found to have average or above average intelligence but had great difficulty in verbalizing. She said he "was interested in learning new material--did it quickly."

Dr. Denhoff: "Twenty years ago he would have ended up in a mental institution as an epileptic and would have had increased spasms and brain damage. The important thing to get over here is that if we thought of this child in terms of pathology--actual damage--the outlook would be pretty poor and many places would so state. Experience has taught us here that if we think in terms of function and dysfunction, forgetting about areas of brain damage but thinking of areas used in trying to stimulate, that this boy has a fairly good prognosis."

Dr. Novack: "This child's need is building of language and understanding of symbols. Unless it is the basis for his work, it will keep him back in the future. If we show him a spoon or a knife and ask what it is, he cannot tell us; but if we ask him to select a spoon or a knife, he will do so...One technique we are using with him is the sensory-motor technique in which the idea is to get the child to produce in sequence from the written form. For instance, to learn that the word 'cat' is spelled with the letters c-a-t, then to match the picture of the cat with the written or printed word, 'cat.' Then we have the child copy the word and articulate every sound as he writes it. Then we have him repeat the word aloud after watching the teacher say it, then touch the picture and say the word the picture represents. Once again, we have him write the word from memory, saying every sound he has written..."

Mrs. Mullaney: "I am trying to carry out this technique in the reading group. Bobby is never asked to read aloud unless he wants to. We have a picture of 'Susan' and 'Betty' and 'Mother and Father'. The pictures have the names under them, and I ask the children to find the correct names. It is being structured that way, and all the group is getting a great deal out of it. I take Bobby many times and ask, 'What is her name?' He answers correctly, 'Susan' or 'Betty.' Before this, perhaps because of his fear of the other children, he did not want to talk out in the reading group. We do this with everything--writing is the same way. We get him to say the letters as he is writing them."

Dr. Novack: "...His vocabulary and sounds in the classroom are worked out with and practiced with the speech therapist..."

Dr. Denhoff: "One of the things that makes for interest is that the medical profession has no idea of the tools and ideas educators talk about. From the clinical description of this child, I feel it could be athetosis with cortical damage..."

Dr. Scott: "If he does not have much speech, how do you know he has gotten the concept? Does he have an understanding of what he is reading?"

Mrs. Mullaney: "We feel that he is getting it. He can find a word, put his hands around the word..."

Dr. Denhoff: "This is a new area for all of us. I wonder again, if bombardment techniques would be helpful."

Summary of Evaluation Session of December 23, 1959

The subject for discussion was Mario "F", described by Dr. Denhoff as a "classic case of cerebral palsy." He had poor balance but was not considered mentally retarded. At one school, however, he had been placed in a retarded class when he had difficulty because of his hyperactivity and articulation problem.

Dr. Laufer: "Mario's picture show poor coordination rather than distortion in the visual-motor perceptual sense."

At this point, Mrs. Mullaney went into some detail in describing Mario's class work. Among other things, she played a tape to show his oral response to simple arithmetic and spelling questions. "He has learned to turn his paper over and write on the other side. He starts with his name and address and goes on to a little weather report we have. Every month a little more is added until the children can turn their papers and go on. Mario can correct his errors."

Dr. Novack: "I think there is a factor of breath control. There seems to be an involvement around the breathing mechanism as well as the vocal mechanism."

Miss Marden discussed results of tests she had given Mario; said that he did better with arithmetic than with reading.

Dr. Tramonti said that in his examination of Mario in January, 1959, he had seen "some very typical things that we see in children with visual-perceptual problems." He added that "Mario seemed to be a boy who would do very well with proper training and teaching."

Mr. Holden said "his practical reasoning and problem solving were very good" at Meeting Street School.

Dr. Novack: "...He needs a great deal of help in developing vocabulary and concepts, learning what things mean, and so forth. I think perhaps the home situation has contributed to this--he gets very little help outside of the school environment."

Dr. Denhoff: "...We have to get the areas of psychology and teaching to come together to have a common understanding."

Dr. Thorp: "I think doctors should use the same language as the teachers. If you say something different to the children, you will get a different answer. This is true of a normal child; much truer of a disturbed child."

Summary of Evaluation Session of January 27, 1960

Dr. Denhoff said the session would be devoted to trying "to get a comparison between normal teaching techniques and some ideas of teaching techniques from the psychological or psychological-medical point of view and culminate by getting concepts of aphasia and the blocking of concepts by brain dysfunction." (aphasia: loss or impairment of the power to use or understand speech resulting from brain lesion or, sometimes, from functional or emotional disturbance.)

Dr. Scott opened with an exposition of beginning reading instruction methods with normal children; Miss Hanley did the same for arithmetic. Dr. Denhoff then asked Mrs. Mullaney to "show us the difference in teaching the mentally retarded or slow learner, because their brain cells are limited."

Mrs. Mullaney outlined techniques for teaching reading to the primary group (ages 6 to 10) of slow learners. She observed that "these children have a very definite need for success, because so many times they have met failure... Whatever type of work you give them will always be successful, because they always have something to follow--it has to be concrete."

Dr. Talmadge described an experiment that had been conducted during a four-month period at Bradley Hospital using two groups of twelve children each. In each group, four had brain damage, five had no brain damage, and three were in a questionable category. All were retarded two years or more according to results of the California Achievement Test. In one group, an attempt was made to develop techniques "we believed would be fruitful in kinesthetic-auditory orientation." The other group, for control purposes, received instruction by standard techniques.

The brain injured children in the experimental group increased one year, by California Achievement Test measurement, in the four-month period. Brain injured children in the control group increased four months.

Miss Murray, a teacher at Bradley, described some of the techniques that had been used with the experimental group. She began by observing that "one of the things we have to remember (in dealing with brain injured children) is that the principles of learning instruction do not differ from those of the instruction of any child, but the emphasis is different...We must always keep in mind when dealing with these children that their instruction has to be individualized. You have to study the child, know his difficulties, try the different techniques, know where to begin and where to leave off...We had to start with activities similar to Mrs. Mullaney's."

Miss Murray said she had tried and rejected as unworkable the suggestions by Strauss that letters and sounds be taught before words ("too boring") and that letters be taught both in manuscript and in script ("too confusing"). She said she had used "a great deal of repetition." Also, tracings.

Also, "a sand box where they can write the word in the sand, then go immediately to their desks to see if they can remember it." She concluded: "We had success with most of these children. The idea of beginning at the right point, going slowly, putting it on an individual basis, is most important; because they certainly came along by getting a good basis. It is important in dealing with these children to be very honest with them, gain their confidence, let them know you are going to help them."

Summary of Evaluation Session of February 24, 1960

This was the first session with a consultant--Mrs. Elizabeth Freidus, Director and teacher of the Elizabeth Freidus School in New York and a lecturer at Columbia University. She was asked first to discuss the problem of reversals.

"Brain injured children usually have a hard time establishing which hand is dominant,"she said. She studies the child carefully until she can detect some hint of dominance, then gives him some mark on his hand or clothing to remind him that this side is left. "Then have him remember that this is the helping hand, if he is right-handed. The right hand is the one that does the important job, this is the one that helps, so that both hands have something to do."

Then she gives the children a great deal of training in sequence and progression using such teaching aids as plastic cones of different sizes and nesting cups. "The best source of materials for that is Montessori...I think so many of these driven kids are driven because they are too confused. Give them experiences in which things come out beautifully step by step...Things come out even--especially with the Montessori materials, things come out even. You can prove that it's right, as Montessori keeps saying in her writings: 'The control of error is in the material itself.'"

"Such materials, she said, "help the child get over his need to rebel against adult authority--the materials have an unanswerable authority of their own that the child recognizes."

Mrs. Freidus then outlined her teaching philosophy for brain injured children. First, look at each child "in many, many ways," and do so constantly, to search out the real reasons why he behaves as he does. Almost always, one of the problems is weakness of ego so that the child is "at the mercy of all the stimuli around him."

Second, try to get him to hold on to a given situation long enough to grasp its meaning, which is perception. "If you can get a child to hold on to these sensory stimuli long enough to figure out what they mean, you have gone a long way."

Third, impress on him the need for planning: What do you do about it?

Fourth, get him to produce a response, recognizing that "producing the response is a wholly separate thing from the intent."

Fifth, teach him to check: Have I done what I set out to do?

"You hang your diagnosis on these hooks...We go through all these steps with every little thing this child does until we find out where he bogs down."

Returning to the discussion of reversals, Mrs. Freidus said that it often helps to get the child to learn to listen to himself, to "use feedback to correct himself." Sometimes, for example, with numbers, it is a question of inadequate comprehension. She said that she has good success in working with the figures in supermarket ads: "It says 31 cents; how much is that?" "That is three 10's and one 1." She uses dimes and pennies to illustrate.

Dr. Novack asked Mrs. Freidus to discuss her handling of mirror writing. She answered by discussing various techniques for teaching spatial relationships. "I have used writing a great deal...as a diagnostic and training tool for training visual perception...I work with the blackboard a lot. This gives them a feeling of limit--what is the beginning, what is the end." She uses cardboard stencils to help them get used to coloring within lines, within limits. "I do a lot of work with tracing at the beginning--not with dots so much, but rather for the business of putting across limits." The concept of the diagonal is especially hard to put over: "They have to understand the direction in terms of their whole body image...You do it with sticks, you do it with blocks, you do it with anything you've got in the room."

Arrangement of the child's material on his desk is very important. "This kind of structure sounds awfully rigid, but it isn't. It frees the child from all the confusion, all this helter-skelter behavior, into doing something that is successful, and learning something that is important."

Dr. Denhoff asked Mrs. Freidus how she "backtracks" children who learned bad habits.

For illustration, she told the story of ten-year old Andy who had learned to verbalize at a very sophisticated level as a means of hiding his inability to perform certain elementary motor tasks. First she had to get his confidence, then persuade him to analyze his problem. "We started working with him way down at the very bottom, and now he is willing to work up step by step."

Dr. Novack asked Mrs. Freidus whether she depended more on demonstration or discussion. She replied, in part: "Rote won't carry over, but tools will; and you give him a tool that he can work with." Often it is a verbal tool, because "these children, so many of them, are more verbal then they are performers." She told how she had taught one boy to draw a square by using lines of four different colors to help him break it down into the component parts.

"This, I think, is one of the things that we have to keep remembering--that if we build from as far down as we have to--and really you have to go much lower than you expect on the developmental ladder, even to the beginning and end, even with the most sophisticated children--when you get way down and fill in all those chinks and build up, you will find that there is an acceleration, because you have taken the kinks out and made it much easier for them to begin."

Someone asked Mrs. Freidus about the utility of a particular technique in teaching the concepts of top and bottom.

"If it helps, it's good," she said. "I hate to use crutches that are not going to help later when the crutch is removed. If they help to strengthen something, fine. If they do not help strengthen something, they are not good."

Dr. Denhoff asked if she made a different approach to a brain damaged child who is mentally retarded and one who is not.

"I can't put children into two categories," she said. "I have to work with this child--what are the gaps in his development, and where are they."

Mrs. Freidus was asked: "Which children do you give cursive writing to? Which do you feel it has value for as against printing?"

She answered: "When their predominant difficulty is fragmenting and they must integrate--when they need to integrate, when they can't put together the sounds of the letters that go to make a whole word..."

To help with structure and sequence, she uses "pocket boards" with three to six pockets. The children sound a given word, then pick up the cutout letters and drop them one by one, in the proper sequence, into the pockets. "It serves for sequence, auditory discrimination, left to right work..." She said that she would use a typewriter with a child who experiences extreme difficulty in holding a pencil.

Again, on the problem of teaching sequence: "With normal children, they spontaneously learn their environment; but with these children, you spoon feed them, you lead them through their environment, pointing things out, like the doorknob--first you turn it, then you push the door. It has to be done--this is why you can't work with more than a very few children, because they will be wasting lots of time unless you stay with them step by step until they can internalize this structure."

She suggested that the detailed business of teaching a cerebral palsied child to walk "is the model for what we do in so much of the learning with these other kids."

On the matter of fixing attention: "Every time I call a child and tell him I want to talk to him, I insist that he look at me before I tell him what I want to say...He has to exert more effort than anybody else all his life. This I am firmly convinced of: These kids are going to have to try harder in most of the things they do all their lives, to inhibit, to focus, to do everything. It is a favor to them to insist on it, and we also have to motivate them to want to exert this effort."

Mrs. Freidus was asked if she thought Ricky "B", one of the children in the Special Class, was retarded. She replied that the question bothered her, "because I don't know if a child is retarded until I have started to work with him. What is blocking him? Maybe it is such a tiny thing."

Dr. Denhoff observed that "we did not select children for the class that were typically retarded."

Mrs. Freidus: "But they are all functioning at the retarded level, and I think this has to be told to the parents..."

Dr. Lipsitt: "I think that part of the problem for parents of deviant children is that they have to learn that they have deviant children for whom predictions are very bad..."

Mrs. Freidus: "I confess that I am very much unable to predict. All I can tell parents, and I tell them this repeatedly, is that this child is going to have a hard time all his life...Again, I tell them about not building on his highest abilities, but rather filling up the chinks in the foundation so he can learn."

Mr. Holden: "If we can get them (the parents) to realize, realistically, what he is able to do now, then they will be able to figure out for themselves a little better what the expectations might be. I don't think it is always good to tell the parents what the long range future plan is or what the possibilities are..."

Mrs. Mullaney: "You can't tell what a normal child is going to do. There are children with I.Q's of 125 or 130 who don't make college. You can't explain that to their parents, and I don't think we can talk to the parents of these children this way."

Dr. Denhoff: "You only tell people a good or bad prognosis when you have nothing to offer them in the line of service. Give them service, and you don't have to say a thing."

In a discussion of Wayne "H", Mrs. Freidus said: "When he can mature out of this tremendous dependency, he may be able to move forward. This is one of the things you work with so much in designing your materials so that the control of error is in the material itself. They can work with a material for a little while and move with it without your being next to them. They depend on your praise at the end, but they don't have to have you right next to them."

More on Wayne: "Start from the beginning, and he is all right; but he is a confused little person. He can't start from the middle any place--he's got to go back to the beginning...With him, the important thing is to help him become independent--therefore, you must let him use whatever methods he needs to use, no matter how elementary they are..."

In discussing Diane "B", Mrs. Freidus said: "She has lots of trouble with spatial relationships, and I would say she needs lots of work with peg boards, blocks, sticks, blocks in three-dimensional designs. She needs loads of work in sequence, with progression, with placing things, and deliberate behavior. I would do it by having her move things onto other things...She needs to have this business of picking something out of a box, putting it in her hand, putting it back in the box. I have taught kids to fill spaces, grooves, with blocks or beads, and then count them into their hands. The way I have done it is by a very deliberate tone--one-two-three--so that they get the rhythm and the deliberate quality of step by step--she needs that."

Mrs. Mullaney asked about Diane's concern with color.

Mrs. Freidus: "Most of them have less trouble with color than with form. I use color in counting as a crutch. When the child traces a 2, it isn't done in one color--he takes a red crayon for the curve and blue for the straight bottom. In tracing a 4, we use three different colors. When it is firmly established, he can do it in one color."

Dr. Novack asked Mrs. Freidus: "Are there things you can do for these children as a group?"

Mrs. Freidus: "We go to Central Park, learn to read maps--where is such a statue, how do we go from 67th to 68th, etc. I work with them in some activities as a group and with some independently. I am doing it my own way."

Dr. Denhoff: "How much psychotherapy are you doing, along with the educational therapy?"

Mrs. Freidus: "Where do you draw the line? I think it is mostly psychotherapy that is going on. One of the things I do is help the child to help himself in what he is going to do. I have to wean the children from the parents' too high standards."

Dr. Denhoff: "In our teacher training, we have to broaden our horizons--we need broader concepts."

Mrs. Freidus: "Many teachers think a child is born at the age of six. We have to know what goes on way before that. We must know how to look at something, how to see it."

Summary of Comment and Criticism by Dr. Frank R. Kleffner, Associate Director, Division of Speech Correction and Pathology, Central Institute for the Deaf, St. Louis, Missouri, March 17, 1960

From his observation of the Special Class, Dr. Kleffner concluded that activities were not sufficiently systematic. It is almost necessary for the teacher to be arbitrary, he said, in indicating the sequence of work she wants the children to follow. She should ignore the spontaneous interests of the children, be direct, and keep everything controlled. He recommended less explanation by the teacher of things done wrong, saying that the children should be encouraged as far as possible to figure out their own mistakes.

He approved the "normal, natural appearing classroom," thought the children appeared fairly well selected for the class, but added that "the group is too large for the teacher to be really efficient." He thought the teacher (Mrs. Mullaney) seemed well suited to the job and had done an admirable job of adapting procedures to the group. He said, "she has good rapport with the children, and she is enthusiastic yet realistic." He thought he detected in her "a tendency towards too much permissiveness." Some of the classroom materials, he said, were "a bit cumbersome and elaborate."

Among his recommendations were:

Reduce the relatively undirected work such as painting, puzzle play, etc.

Provide an assistant for the teacher. "These children need direct teaching in small groups where each gets his turn on every item. This can't be done with any control over those not being taught at the moment, without a helper."

"In the actual teaching periods, more participation by each child can be obtained by having each one verbalize what he has done in controlled question and answer exchanges."

Avoid indirect approaches to helping the child discover errors.

Avoid verbosity in exchanges with children.

Use devices to identify and stigmatize errors resulting from inattention or poor concentration.

Miss no opportunity for each change in activity or routine during the daily sequence to be used for "command and follow" training. "Usually for this type class, there is less value as there is less control. That which tends to proceed in spontaneous undirected fashion will usually help least."

Dr. Kleffner warned against the temptation to adopt a "try it and see" attitude, observing that "this can result in superficial, hesitant, half-hearted use of rationales." He said, "there should be some definite bias and commitment to certain clear-cut principles in order to avoid the drift of tepid, shapless, pure eclecticism."

Summary of Evaluation Session of March 23, 1960

The consultant at this session was Dr. Rudolph Capobianco, formerly Director of the Institute of Research and Rehabilitation at Syracuse University and currently Professor of Educational Psychology at the University of Minnesota.

In his introduction, Dr. Novack suggested that Dr. Capobianco might present a different "or even startling" point of view on the subject of brain injury.

Dr. Capobianco began by pointing out the difficulties of agreeing on a definition of brain injury in view of the multitude of symptoms described by different specialists in the field. He observed that "many children with similar learning difficulties are not brain injured and benefit from the exact same techniques that you are using in your special class." He described research he had carried out that revealed no differences in terms of achievement between brain injured and non-brain injured children.

"Now I am not trying to destroy the whole concept of special classes for children with special learning difficulties, not at all; but we should be extremely cautious as to which children we put into this class and have a good reason for putting a child in there, not just because he is brain injured. The bulk of our brain injured population can get along in a regular classroom situation, assuming normal intelligence. Those who can not, by all means, put them into the special class. But don't limit it just to that--have other children who are emotionally disturbed or who for some other reason are not learning reading, writing, arithmetic--put them in the class, too."

He discussed a class for the brain injured in Minneapolis with which he was familiar and told how the teacher found it unnecessary to follow many of the techniques recommended by Strauss and Lehtinen. "I think that you people, on the strength of what I have seen this morning in the classroom, obviously are not following the old standard approach, either, for teaching these so-called brain injured children. There is lots of color in there, and these children don't seem to be too upset by it...I hope I don't sound as if I am tearing apart the clinical education approach used by Strauss and Lehtinen--I'm not. Many of their techniques are excellent, but I think they also work with normal children."

Dr. Denhoff: "I would say you are among friends, because we didn't believe in Strauss in the first place."

Dr. Capobianco: "Brain injury has been used as an excuse more than anything else in the world that I know of...This is a kind of miraculous thing that happens--you can't reach brain injured children. It also exonerates the mother and father if they have problems with the kid at home...I resent this--there is no youngster you can't handle; assuming a basic amount of intelligence, there is an educational technique that is going to work with him."

After some more discussion of the meaning of brain injury, Mrs. Langdon asked, "What do you think is the right direction to start?"

Dr. Capobianco said that he thought the right start had been made with the special class and with the willingness to turn to new techniques if the textbook ones didn't work. He advised keeping exact records of what went on in the classroom, "so that when somebody else wants to replicate your class, they can gain from your experience rather than start from scratch again."

He went on to discuss special classes in a general way, observing that they always have so many professional persons connected with them that they can't help but succeed. "There has to be some way of making this a lot more realistic in terms of how much time, energy, and effort is going to be spent. In the beginning stages, you should continue, by all means, to do what you are doing now, but you should have plans for the future, for cutting down on a lot of this material; and let these kids try to make a little bit of this on their own."

In answer to a question by Dr. Novack, Dr. Capobianco said that his own studies had satisfied him that "reversals tend to be more a function of the mental age level, whether or not there is a brain injury."

After some more discussion of the significance or lack of significance of the term "brain injury," Dr. Lipsitt asked, "Could you give us some suggestions as to how we would go about selecting persons for a group such as this (the Special Class)?"

Dr. Capobianco: "I would go purely on the basis of what the teacher sees in terms of his performance in the classroom. If he has a learning problem in reading, arithmetic, or any other basic school subject, then he is a good candidate..."

Mr. Holden: "That sounds as if you are throwing out any theoretical research approaches, but merely using a very practical down-to-earth policy of taking children who need it."

Dr. Capobianco: "What I was really saying is this--let's not limit it only to proven cases of brain injury, because we have many other youngsters who have perceptual difficulties where there may be a brain injury, but we have absolutely no indication that it exists."

Dr. Denhoff: "My concern is not just in selecting a kid because the teacher thinks he needs it. There is the question of what comes first, and again, there is the behavioral element that can contribute to learning, etc., and vice versa. Shouldn't we try to get the total concept of the behavioral element?"

Dr. Capobianco: "Yes, I have to agree with you in this case. This is probably the best way to start right now, the way you have."

After a brief discussion of the merits of current research in the field, Dr. Denhoff observed that "the ten kids we have here are unimportant in themselves, but they are important if they give us some concept of how to handle them in a regular group."

Dr. Capobianco agreed, and then said, "This is one of my pet peeves, as you know from some of my writings, that a teacher should not be concerned with etiology, ever. She treats symptoms. She should not concern herself with whether a child is brain injured or not--if he shows a certain set of symptoms, you treat those symptoms; and it's the only way a teacher can ever handle the problem..."

Dr. Lipsitt observed that the purpose of the special class is to discover if the learning rate can be raised through the use of special learning techniques.

Dr. Capobianco: "The special class is concerned with children with special learning difficulties and is doing the same thing for more youngsters at the same time. Instead of working on a one-to-one relationship, which is terribly expensive and impractical, they are trying to do it as a group. I am sure that your teacher, Mrs. Mullaney, has some sub-groups in her little class--she doesn't treat all ten of these youngsters in exactly the same way at exactly the same time--you can't do this...What I see as a special class for these youngsters is an expanded psycho-educational clinic that is in a classroom."

Summary of April 6, 1960 Discussion by Dr. Novack and Mrs. Mullaney with Dr. Ruth M. Patterson, Director of Research Project #50, Columbus State School, Columbus, Ohio

Dr. Patterson: "One big thing is true in our work--we need a control group; but I have never been able to see how we can develop one, because you have to use the child as his own control. You can't take any group and say that it is comparable to any other group..."

There was considerable discussion of the possible physiological basis for brain injury, a field in which Dr. Patterson had done research. She drew heavily on the work of Dr. Lise Gellner. By and large, it appeared that she was working with children more severely handicapped, in a mental sense, than those in the Rhode Island Special Class.

Dr. Patterson: "One of the things I did in the beginning was very helpful. We sometimes have volunteer helpers, and I got some of them as research helpers. One turned out to be excellent as an observer. I had her do time observing--write down every single thing one child did in five minutes--his movement, his speech, etc. We found this helpful, because a teacher just cannot remember every single thing a child does. When you read it afterwards, you see meanings which you did not see at the time. Over a period of time, you begin to see patterns which you did not see before. I think it is an excellent technique. It is a nursery school type of child development approach which isn't used in training of teachers other than those in nursery school. It is time consuming, hard to do."

Dr. Novack: "We hope to move this group into a classroom where there is one-way vision and are trying to get a lens which will permit our audio-visual men to take pictures without distracting the class. We can't get one that takes the whole class. When you start focusing in front of them, the child reacts to you. It is impossible for the teacher to work with a child. It could be a very important way of studying the field."

Several children in the Special Class were discussed briefly in terms of their particular difficulties: Diane "B", Wayne "H", Frank "F", and Kenny "L".

Summary of April 11, 1960 Discussion by Dr. Novack and Mrs. Mullaney with Miss Charlotte E. Larson, Teacher of Brain Damaged Children in the Joliet, Illinois Public School System

Miss Larson advocated that the teacher of a special class should build up the class one by one over a period of days to allow her time to become accustomed to the particular needs of each child.

Mrs. Mullaney: "After you get your group to-gether, would you try to teach a group within the group or individually?"

Miss Larson: "At first, mostly individual. You can be teaching two different youngsters at the same level, and the two will be learning at different levels. We work towards grouping, because that is the normal thing. We start individually; when we get two to-gether, it is wonderful."

After Miss Larson had described some of her teaching techniques, Dr. Novack observed that "you are talking in terms of setting up a curriculum for each child."

Miss Larson: "That's it. You have things for him to do. The teaching materials must become self-teaching so that he can go from one to another. There is one hard rule--you must finish what you start before you go on to the next thing."

There was considerable discussion of specific problems, as for instance:

Mrs. Mullaney: "I have seen the spacing difficulty with manuscript but didn't run into too much of it."

Miss Larson: "Strauss claimed that this is the way to teach hand-eye motor coordination so necessary as a psychological prerequisite to any learning. If I were teaching manuscript, I would use three spaces instead of two. The spaces would be marked off with color and red-to-red would be capitals. Down to the green line would be where you bring the below-the-line letters. This may be too much structuring, but you are structuring it mostly for perceptual training. It is important to know where to take the letter. The colors train them to start at this line, go to that line..."

Another example:

Mrs. Mullaney: "Arthur has been copying his name from the name on his desk. He leaves off the final 'R'. I tell him to look at it, ask him what is missing."

Miss Larson: "I would make the final 'R' in his name on the desk in very heavy red for awhile. If they don't see something, make it a bright color. I am always telling teachers to try this, try that."

At one point, Miss Larson showed slides of her own classroom and of the children using various items of instructional equipment.

Mrs. Mullaney: "How long did it take you to accumulate all this material?"

Miss Larson: "You don't start with the whole thing. If you have a child who needs something, you make it. Don't throw anything away."

Mrs. Mullaney: "This makes me see where I should have thought of things."

Miss Larson: "You have other things that you work with. Teaching is so individual that what works for me may not work for you, and this is true in reverse."

Dr. Novack: "Do you have any printed material you can give us?"

Miss Larson: "I have never put anything in print. The first I ever wrote is what I put in my correspondence with you. The reason I haven't printed anything is that someone will take it and interpret it 100 per cent in black and white; and it will not be what I meant at all..."

(Miss Larson had worked with Strauss and referred to him several times. She said specifically at one point that she followed Strauss in not attempting to teach to the area of a child's difficulty.)

Summary of Session of April 27, 1960

Dr. Denhoff announced that the consultant scheduled for the session had been unable to come, so he thought the group might spend its time in a "bull session--free and easy--as to the direction in which we are going." He asked Mrs. Mullaney to show some pictures that had been done at different periods by the children in the class. She began with one done at the beginning of the year by Ricky "B" in October when he was seven. Mr. Holden said that at best, it appeared to be the work of a child of five.

Mrs. Mullaney then showed a much more advanced picture, also by Ricky "B" done just the day before. She said, after explaining the picture, "I know myself what has happened to these children, but it is very difficult to tell others unless you have something to show."

Dr. Denhoff: "This is a pretty picture. It seems as though this kid is functioning at a higher level--perceptually, conceptually, intellectually."

Mr. Holden: "You wouldn't think this would happen in this length of time, ordinarily--I don't think you would be able to say this is maturation."

Mrs. Mullaney then showed examples of Ricky's writing that evidenced similar strong improvement. She indicated that the improvement had been due in part, at least, to "structuring."

Mrs. DiMase: "So many people misunderstand the word structuring. What do you mean by structuring?"

Mrs. Mullaney: "That is having them know everything that they have to know about where to start, when to start, how to do it, providing the lines for them to write on--that is structuring. It is a very difficult word to define, because everybody apparently interprets structuring in a different way. To me, it is leaving nothing that is not built upon something else."

Discussing Ricky's progress, Mrs. Mullaney said, "It is interesting to see now that he has the ability to do his name and his address without any guide at all. He can shut his eyes, and that is a very great help to him. He will say, 'Can't remember,' and I will say, 'Shut your eyes and see if that will help.' He shuts his eyes and will say, 'I see it.'"

There ensued a lengthy theoretical discussion on questions relating to the sensory functioning of brain damaged children with general agreement that different children have problems in different areas.

Dr. Novack: "This is my contention; that we must be careful not to generalize to all of them, that some of the things which work for a few are the very things that would be the worst for others. Only by differential teaching, by working with the child, seeing how he responds, can we tell."

Dr. Denhoff: "The importance of your group and the contribution of your teacher might be to give us diagnostic clues of the sensory strengths or weaknesses of kids so that in teaching them, we try to go to their strength first, to use their strength to build up their weakness. In other words, it might be an auditory approach, a kinesthetic approach, a tactual approach, to each kid."

Mr. Holden: "I would like to say that...it may not be just a matter of strengthening weak parts or using the best assets. You see, it's not quite as simple as that. The thing is that, with these children with brain damage, it is not an absence of function but a distortion of function which causes the trouble. This happens with lesions which produce scar tissue which disrupts and disorganizes--it's not absent, but it throws more monkey wrenches in. What we are talking about, what Dr. Novack has talked about, is to try to eliminate this distortion so that the other will function more normally. It's not a simple building up or additive process. It is the elimination of a part which is making the whole thing more disruptive."

Mrs. Langdon asked Mrs. Mullaney if Ricky seemed more confused with or without the sense of vision.

Mrs. Mullaney: "I think that one thing we might say that many of these youngsters have in common is the fact that they don't seem to be able to integrate all four things (sight, speech, touch, and hearing) at one time, and maybe it is because of a weakness in certain areas. You watch them, and some of them can feel it and look at it; but it is very difficult for them to say it."

Mrs. DiMase: "I think Mrs. Mullaney has made a very interesting comment--maybe it isn't that one is weak, maybe separately he can do each one all right, but it is trying to put them to-gether that he has his trouble."

Mrs. Mullaney: "I think that if there is one word I think of often in dealing with this youngster (Ricky), it is the word 'integrate'--there are such gaps..."

Mrs. Mullaney raised the question of whether Montessori had allowed a great deal of permissiveness..

Dr. Thorp: "Not as much as you would think--not as much as the literature says. Those who studied with her found that her freedom was quite fenced in. It was quite structured..."

Mrs. Mullaney: "Much of the literature has left this out. I am firmly convinced, after working with these children, that they are not happy in a situation that is permissive and that allows them too much lee-way."

Dr. Thorp: "They are no different from other children. Most children want order, they like limits, and they like to help you set the limits."

Mrs. Langdon asked Mrs. Mullaney if she had been able to observe in each child in the class, which particular sensory channel was the disturbing one. Dr. Thorp suggested that Mrs. Mullaney "hasn't had this in mind when she has been watching them."

Mrs. Mullaney: "I think I can say that each child is different; there is not doubt about it. Take Bobby "T"--to me he doesn't seem to have any problem in seeing it; it's in reproducing it and telling you what he sees. He couldn't tell you that this is Bobby--he couldn't before, but now he does say it is Bobby. Before, he would just shake his head, and so forth. When you asked him to say it, it was very difficult; he just couldn't do it. I would keep him going over a certain letter until he could say what it said. His problems are different than Ricky's--I got a different response on the drawing and different responses on his paper. These are the things you see, and you structure for them in a different way. Bobby didn't need the lines on the paper, but he needed a different type of structuring. For instance, he did the tracing first. I wrote the words, and he went over them with colored pencil. The next step was for me to write it in red, and he brought it down looking like this. Then he did it on his own, and he has made the transition--we have the other papers to show the inbetween growth, and this is what he is doing now. His problems were different from Ricky's... Diane has a different problem--this is disorganization."

Dr. Thorp: "Have you done anything with large paper without any attempt at lining?"

Mrs. Mullaney: "We did a way back. With someone like Diane, limiting her was a better approach than letting her stay in this area. If we let her stay there any longer, at least it seemed to me, she just kept getting more disorganized. The idea of pulling her down into organizational levels where she had to watch...When I say visual, that is a wide area. With Diane, I think there are multiple factors to be considered. One of the greatest is her disorganization in everything she does. Setting limitations for her--she has felt the limitations in this, much more so than she felt them in the other way."

Mr. Holden: "Do you think the time has come to test out the free paper again? When you start off with the free paper and then do some training procedure, it is important to test the thing out in the same way that you began so that you see the difference there. That would be the best way of finding out the amount of improvement that any child has made."

Mrs. Mullaney: "I think we see that. I wish I had brought in some of her drawings, because that is another time when they write their names on their papers without any structure; and you see that she is confining it on her own."

Summary of Evaluation Session of May 25, 1960

The consultant at this session was Isaac Jolles, Psychologist at the James Hart School in Homewood, Illinois. Mr. Jolles opened with a lengthy discussion of "sensory deficits and intensified stimulation." "Brain injured children tend to be deficient in at least one of their sensory channels," he said.

"The easy way to go about getting these children to learn...is to teach around the handicap...but that is not solving this child's problem, because he still is having difficulty learning through auditory experience--he is still handicapped."

It is important "to teach to the handicap," and this can be done by intensifying the stimulus. If it isn't done, the child will fall behind again as soon as he gets into a regular class. Mr. Jolles gave examples of various techniques such as intensifying the visual stimulus by a color cue.

Other techniques he mentioned included rhythm exercises and marching "to improve the child's ability to respond kinesthetically," the use of stencils, and the practice of writing with a stylus in modeling clay spread thin in a cookie pan. He told of a technique he had developed of using poker chips to illustrate arithmetic concepts--adding and subtracting.

"We don't do this (using special learning cues) through the entire training of the child. Eventually we want to get him to do it just as any other child will do it, but we have to give him this crutch at the beginning in order to have him attain success, to have him get a concept he will retain. So many of these kids have trouble with retention. The teachers say, 'I teach him something today, tomorrow he doesn't know it.' The reason why is that today he has been repeating parrot fashion rather than really learning. He doesn't have the concept, but once he has the concept, he will retain. This kind of thing gives him the concept."

Mr. Jolles went on to describe a color cue technique for the teaching of reading. "This can be further fortified," he said, "by combining it with a kinesthetic technique, such as having the child trace out sandpaper letters with his finger."

Color can be used, too, in the training of perception. Gradually the color cues are withdrawn as the child gets to the point where he "can see things the way the rest of the world sees them without the crutches--that is our ultimate goal in working with this type of child."

At this point, there was some discussion of techniques with other members of the group, and then Mr. Jolles stated: "It so happens that in working with this deficit that the child has, we use reading, writing, and arithmetic as tools; and so academic growth becomes a by-product of the rehabilitation program. That is important to remember--our primary goal is not improving the level of reading, writing, or arithmetic; it is to alleviate a learning problem."

Mrs. Mullaney raised a question about the phonetic approach to the teaching of reading, and then asked, "if any of these youngsters wind up as word callers with no comprehension."

Mr. Jolles: "It is possible for these kids to become word callers and not have comprehension; but when that happens, particularly with a child of good intelligence, and by good, I mean normal, it is because of faulty teaching..."

Later Mr. Jolles said; "One of the things we must always bear in mind in working with these children is that we should avoid as much as possible giving them any failure. When we assign them something to do, the teacher must be very sure that the child can do it, which means that we start on a very simple level... From there on you work and you go in very, very minute steps. You can increase those steps later on, but at the outset you've got to make this child feel that he can be successful. Once he feels that he is successful and develops some confidence in himself, he will find strong motivation for further school work and learning will become more rapid. If you get a child into a program like this who has been in school for three years, you usually have to spend your first year breaking down the resistance to learning, because he is so convinced that he can't do it that even you, with all your gadgets, special room, limited enrollment, and everything else--'You can't teach me to read.' If you have a child who is resistant to learning and the first thing you do is expose him to failure, you've got a hard job on your hands pulling that child back on his feet. You've got to expose him to success immediately--he must have success, no matter how elementary it is."

Summary of Final Evaluation Session of June 15, 1960

Dr. Denhoff suggested that the year be reviewed "to find out what techniques, what procedures, what methodologies might be of help in teaching teachers" of the brain injured and also, "what ideas all of us got out of this experience."

Dr. Novack said that Mrs. Mullaney was away and that she had not left any record of "the specific techniques that she had used in working with the children." He added that it would be a good idea "if we could talk about some of the problems which have arisen as we looked at all the children rather than at the individual child."

Mrs. Langdon, speaking for the staff of the Meeting Street School, reviewed the problems that had arisen in sending children from the School into regular kindergartens or first grades. It had been hoped, she said, that the Special Class would result in some techniques that could be made available to teachers in the regular classrooms to guide them in their handling of brain injured children. But if such techniques had been developed, she said that she did not know what they were.

Dr. Denhoff observed that the need of the children in the Special Class for medical care appeared to have diminished markedly. In Dr. Novack's view, this was at least partly due to the staff being "a little more sophisticated in terms of what kind of behavior and difficulty these children normally would have and, therefore, did not call undue attention to them."

Dr. Denhoff said that "if such a group has been giving security to these parents, it points out one of the weaknesses of many normal school situations." Mr. Holden said that he thought the group meetings with the parents had helped to allay fears and kept down the number of medical referrals.

Turning to Miss D'Wolf, a physical therapist, Dr. Denhoff said, "One of the preconceived ideas we had was that disturbances involving concepts were part of these youngsters' problems and that if we could help through gross and fine motor control techniques, it would help these children with their physical deficits and perhaps, their learning problems might be alleviated."

Miss D'Wolf listed some of the activities that had been included in the afternoon program--ice skating; swimming; balance activities such as riding bicycles, rolling hoops, rolling on the ground, doing lots of climbing; running; ball games; stunts in tumbling. She said that although "we have no way of knowing to exactly what extent the program was beneficial, the program director reports that all the children gained in coordination."

Dr. Denhoff asked Miss D'Wolf if she thought the gain had been greater than that involved in normal maturation; and she replied that she thought it had been.

Mr. Holden, the psychologist, identified tests that could be useful in measuring progress by the children. These included a drawing test--administered at the beginning and at the end of the year--to measure the child's progress in body concept, the regular I.Q. tests, and "actual achievement tests." Mr. Holden added that the main purpose of the parents' meetings had been to see if this outlet for the parents to express their feelings would be reflected in better academic performance by the children.

Dr. Denhoff next asked Dr. Novack to summarize the year's experience, emphasizing techniques and devices "that will be valuable from the educational, technical point of view and also that would be of value to us from a medical, psychological, and diagnostic or treatment point of view."

Dr. Novack said that there were two limitations to be kept in mind in considering the value of any educational techniques that had been used. First, the teacher "did not know the basic concept of brain damage" and had had no experience in using any of the techniques previously developed; second, "in the year's time, it was difficult to use any technique over a sufficiently long period of time by itself to evaluate" its contribution. Another difficulty was that it had become apparent that the literature on the subject was inconsistent in its use of key terms, such as "brain injured" and "mentally retarded."

"If we break it down to an extreme point, we would have to come up with Dr. Boyer's concept that essentially what these children need are good teaching approaches--never mind the special techniques or what have you--just a good teacher who looks to the child for indications of where we should go with him," Dr. Novack said.

A fundamental need, he said, appears to be to give the children "a highly structured situation" in which they will be helped to "organize themselves." Most of the consultants agreed on this, he said, and also on the importance of "the intensification of stimuli." Other principles on which there is wide agreement, he said, are those involving "feedback," in which the child is taught to check on his own performance; the phonetic approach in reading; and working with the parents.

Dr. Novack began his summary review of the consultants' contributions by observing that in some areas "there isn't any agreement" among them. Kleffner had insisted on "a very restrictive kind of teaching--no permissiveness at all." Capobianco thought that "his mentally retarded and our brain damaged do not differ as much as we think they do." Elizabeth Freidus "gave us a very worthwhile approach in working with the children, although "I don't think that our children essentially are as involved or as handicapped as hers are." Ruth Patterson "gave us a good deal of theoretical information...and left with us some specific directions as to how they go about teaching the children." Charlotte Larson "is a Strauss disciple and also a thinking person" who showed us many techniques. She could not give us any specific methodologies, she would not let us have plans for building equipment. Isaac Jolles expressed admiration for "the close medical relationship" in the Rhode Island project.

Dr. Boyer, in layman's language, summarized the object of the experimental program as to gather a variety of techniques and try them out in a classroom with at least ten brain injured children in the hope of finding ways of reducing instructional costs for such children.

After some discussion of random aspects of the program, Dr. Novack said, "From our point of view, we are not only interested in what Mrs. Mullaney did in the classroom, because I do not know whether we really proved anything in the classroom except that if you take a group of children, put them in a good physical situation, give them a good deal of attention, look upon them as individuals, you can get growth--you are going to have changes in behavior... We've seen progress, but again, we don't know what has brought this progress about."

Dr. Denhoff said that he thought each child in the program should be tested carefully to see what evidence could be found of intellectual and emotional improvement; but Dr. Novack did not think this practical, because "our way of looking at these children has changed in the last two years." Dr. Laufer also was pessimistic about the chances of learning much by testing.

Mr. Sherlock observed that "there have been many techniques used, and I think they can be evaluated to some extent--even if they are somewhat nebulous, they have made some kind of a contribution to the growth of the children..."

"A class like this should be set up from three years to three years, because this is the time when you can expect measurement," Dr. Denhoff said.

Dr. Boyer said that he thought it was important that it had been demonstrated that ten children could be taught tutorially in a special class even if they had not been brought to the point where they were ready to go into regular classrooms.

Dr. Denhoff: "I think the important thing that Dr. Boyer is saying is that in one year we were able to get a group of atypical bizarre children to work as a group."

Dr. Boyer: "This is an amazingly successful thing to do."

Dr. Denhoff: "I think it took a five-pronged approach, and we don't know which approach is important at the moment; and it doesn't make any difference at the moment. Another thing - with this atypical group, utilizing common sense procedures that could be taught to a good teacher, you were able to achieve some measure of academic success."

Dr. Novack said that the social worker's reports on home visits and parent-staff discussions "show a lessening of many problems and the disappearance of some which had existed before."

Dr. Boyer, referring to the "gadgets" Mrs. Mullaney used in the classroom, said, "I am beginning to suspect that maybe the difference that they make in a clinic and the difference they make in a classroom are the same--the difference isn't in the child, it's in the teaching."

In that connection, Mr. Holden said that he thought it important to evaluate "the kind of teacher that is effective with these children--is it intellect, is it sensitivity, is it emotional adjustment--what are some of the characteristics that make for an effective teacher?"

Summary of Evaluation Session of October 19, 1960 with Mrs. Lotte Kaliski, Consultant

The Special Education Class was now in its second year, and the first part of the session was devoted to a discussion on the advisability of admitting a girl named Alice to the class. It was finally decided to do so.

At one point, Dr. Denhoff asked Dr. Novack to list the criteria for class admission.

Dr. Novack: "The important factor is the full team concept of the child's potential which should indicate...the ability to eventually do normal or near normal work. He should show an indication of readiness to do certain school work, to have the primary problem of brain damage as opposed to any other problem, mental retardation, or emotional problems."

Mrs. Kaliski observed that "my philosophy is that we cannot wait for a child to be ready. I do not believe--and we have controversy there--in waiting or in taking the test findings as a cue for us as teachers as to when we should start a child on the academic program. We try it, we start whenever we feel some progress can be made."

Mrs. Kaliski told of her experience in observing the special class at a time when Mrs. Mullaney, the regular teacher, was away at a conference. The class had been highly disorganized and the substitute teacher and the children upset. She then discussed her theory of grouping for special classes: The age range should be held to two or three years; the class size no more than seven, with only one or two children who are difficult to manage. She advocated "as well-rounded a curriculum as possible" for the children and "frequent changes of subject matter;" also, that the children be grouped around the teacher.

Dr. Novack: "Are your groups so homogeneous in make-up that you can actually work with all of them at the same time?"

Mrs. Kaliski: "The group is not so homogeneous that they can all work at the same level. I have worked out a technique in which we have the entire group participate while we focus on the work of one particular child. Teachers find it extremely hard to apply this technique, but once they do apply it, they find it most rewarding."

Mrs. Kaliski said her experience had been that many materials and techniques could be used interchangeably with mentally retarded and brain injured children. She recommended the Montessori materials and was told that they had been used at Henry Barnard for many years--"Mrs. Mullaney has used it (the Montessori method) as part of her regular program."

There was some discussion of the problems of diagnosis, and Mrs. Kaliski observed: "Many times when we get children with a diagnostic work-up, my question is what area is the best to start with--the auditory, the visual, the kinesthetic? Many times, I have raised these questions; and it all resolves in a matter of trial and error to find out...We try their visual-motor responses. We do usually start out with the sandpaper letters and numerals approach. We may try the writing then on the basis of capital letters--if that doesn't work out, we try to have them connect lines between colored dots...We try commercial readiness books, we try pictures...We use flash cards in reading as applied to objects in the classroom...We try out the Stern materials which we use exclusively for our children in structured arithmetic. We begin where we can."

Summary of October 19, 1960 Interview with Mrs. Lotte Kaliski, Director of the Lotte Kaliski School, 127 West 79th Street, New York 24, New York

Those present included Dr. Novack, Miss Gildea, Mr. McCarthy, and Mr. Durocher.

The opening discussion dealt with techniques for handling writing problems of brain injured children. Mrs. Kaliski emphasized the use of color cues as, for instance, a green line to start with and a red line to stop. She said that the key to tackling the problem of reversals was to help the child establish dominance, left or right, through exercises and special games. Here again, in working with the letters in which reversals occur, color cues can help. She has the child do the straight lines in B and D, for instance, in one color and the curved lines in another color.

Dr. Novack: "Do you help a child to make a decision as to which hand to use?"

Mrs. Kaliski: "No. The teacher has to be very much aware, once the decision is made, that the child uses a particular hand. It is a very difficult decision to make. First of all, I rely on the psychologist's test finding. If that is not conclusive, we put our pea pods in front of the child and have him pick them up...I try to get more information--ask the parents to observe over a period of time which is the preferred hand."

Dr. Novack asked about wall displays. Mrs. Kaliski said that she was in favor of them but had noticed in the classroom at Henry Barnard that art work was displayed in two different places on the walls.

Mrs. Kaliski: "What I usually suggest is that the art also should be structured. I am not at all against wall display, very much for it; we have a lot. I am very much in favor of clarifying it--in one space have art work, leave a big space, then have something else--numbers, a calendar, a number chart--leave another big space, have spelling words, leave another space, have another subject."

Mrs. Kaliski recalled that in the Henry Barnard classroom she had noted a table set aside for clay work and a corner for painting.

Dr. Novack: "In the morning when the children first come in, they can go to different activities; or Mrs. Mullaney may decide beforehand what the children can do. The painting and the clay are not so much for enjoyment from their point of view, but it is still part of body concept, body awareness."

Mrs. Kaliski: "Yes, it is very constructive."

Dr. Novack: "We use it for different problems. We have a child who has hemiplegia; we try to get her to use both hands. For one of the boys, we bring out the punching bag. Again, we use some of these activities to see which one the child prefers, and try to find out why. This we watch carefully--what do they turn to most? Finger painting, coloring, clay, they all enjoy tremendously."

Mrs. Kaliski: "I am very much interested in finger painting. We have found many times that it was not a good activity, because it aggravated the problem of lack of control."

Mr. Durocher asked about the use of typing. Mrs. Kaliski said it is "excellent for visual-motor development activities" and she is very much in favor of it. She does not use it, however, with the younger children.

Mr. Durocher: "How about the languages--French, Spanish?"

Mrs. Kaliski: "They are taught at the conversational level. We use records; I feel very strongly about them. The children pick them up beautifully, the younger the better. I do not include children who have speech articulation problems."

Mr. McCarthy: "How does cooking fit in your program?"

Mrs. Kaliski: "Cooking is a very complex activity, correlated and integrated with the academic subjects...The teacher will first decide with the children what the menu is going to be. Suggestions are made and written on the board--writing. It is also a clarification--they have to name what they want and explain what part of the menu it is: entree, beverage, dessert. They bring in a certain amount of money, which they count. They do it very beautifully in a heterogeneous group. Some of the children may be able to name the coins, others may be able to count by ones, some by fives, some by tens. Others may just sort the dimes, the nickels, the pennies. This teaches them money, adding, counting.

Then they set up a shopping list--again, writing. Then they make their assignments as to who is going to be responsible for getting this item, who will get that item. They are supposed to remember when they get to the market, under supervision of the teacher, not just one item, but usually several items per child. They have to locate the items in the store. When they make their purchases, they have to remember how much each item was. They come back to the school, do the cooking--everyone gets an assignment. They serve the food, eat it. Then they have to work out the problems of how much money they had to start with, what each item cost, what they have left."

Summary of Evaluation Session of October 26, 1960 with Miss Ruth Mallison, Educational Therapist from New York City

Dr. Novack opened by explaining that Miss Mallison had observed the Special Class under unusual circumstances--a substitute teacher had taken over so that Mrs. Mullaney could go to a convention in Newport.

"After two days of a difficult situation," Dr. Novack said, "Mrs. Mullaney was called back from the convention to take over again. Since then, for some reason or another, we have been observing in them this driveness, this behavior which we typically have associated with brain injured children. I think we are particularly interested in knowing why this is so since Mrs. Mullaney, as far as I have been able to determine, has always had a classroom which...was very much controlled in functioning."

He added that this situation meant there was a hitherto ignored aspect of the children's behavior "which we have to...handle before we can send these children out into community schools."

Miss Mallison opened her observations with the comment that "this is an awfully large group to handle in order to give intensive training." Dr. Novack explained that the class was experimental "to observe if certain things might be done under certain conditions."

"From what I have observed," Miss Mallison said, "I think many of your children at this point cannot function independently of the teacher...There is an awful lot of sitting around and waiting, and many of your children just can't take it yet...I just think some things can't be done very effectively in such a group."

She said that she had limited her own class of this type to five children. "Time is so important with such children," she said, "that if you can speed up the process of helping them to function as normally as possible in as short a time as possible, in the long run a great deal more is gained..."

Miss Mallison observed that as a general rule, she had found that most teachers working with brain injured children "are most concerned with the visual-motor but not half enough with the auditory..." She said that she had been struck by the immaturity of the speech of the children she had observed in the Special Class.

Dr. Novack asked, "If there is too much attention paid to the visual-motor training of these children, what are some of the things that we could do to improve the auditory aspect of the difficulty?"

Miss Mallison: "I don't think it is a matter of whether too much attention is paid to one rather than to the other...I really think that what is the major problem should be determined by careful initial evaluation of the child. You cannot see what it is by just watching a bunch of children--this is impossible.

I think it is easier, perhaps, to train visual-motor functioning; rather, it would be more correct to say that there have been more devices invented for the teacher...It strikes me oftentimes that all of the people who work in special education tend, when it comes right down to dealing with children, to treat them too much like a bunch of infants, too much on an infant level...I think that motivation is a great factor in learning in the classroom, not just teacher's approval but real motivation--what can you do with all this stuff that is taught in school, how does it carry over into the life outside the school situation...Many children, I think, do very well in their special classroom or in the special situation but still don't really function outside of it. I see this every day. I don't know what the solution is, but I think it is a major problem in teaching these children especially as they get to be older."

Dr. Novack observed that "we do know that one of the problems of the brain injured individual is this inability to generalize and abstract."

There was some discussion about how early it was possible to get a reliable evaluation of a brain injured child and begin his training.

Miss Mallison: "I do know that children are being handled at the clinic from a few weeks and a few months on up very effectively. I think we are really missing the boat if we don't get them as early as possible...I find that if we can introduce any of the training that is in need, as well as the academic work, to them before the age of five, we have a far greater success...I think it is very sad when you have to pick them up at the age of six or seven and start the academic work then, because I think you have missed all the things that go into it. You cannot use the same devices for a seven-year old that you can with the two, three, or four-year old...I think we wait too long...I don't think you have to wait and then suddenly at age six, because this is a rule usually, start the academic work..."

Dr. Gerald Solomons: "What is the commonest problem you find in these children?"

Miss Mallison: "Behavior--but this is not why they are referred."

Dr. Novack: "This is a pretty general term."

Miss Mallison: "It is a pretty general term, but I think it expresses exactly what I am trying to say...The children all have severe learning difficulties, and this is usually why they are referred. Down the line, I do not find a child who does not need help and work and whose family does not need help and work--how to manage him, how to live with him, how to find out what you can expect of the child, and what you cannot expect of the child at this level and in this kind of functioning. I really think behavior is a major problem. Many of the behavior problems which these children have are based, I think, on mismanagement at home, which is a natural result of the problem but certainly has not helped them grow out of their problem or at least function with their problem.

With many of the children who are referred to me, I have to start by training them in things they should have learned when they were two or three, if not before...I question very much normal schooling for many of these children if they have not had a good basis of intensive training on which to build...Even with the best type of education, I just don't think it is realistic to think that all children, because they have had special education--I mean all brain injured children--will be able to make the grade in normal classes."

Miss Mallison suggested that not enough consideration is being given to the question of how long brain injured children should be continued in a special class. Dr. Novack said the question had not been considered in Providence, because the primary concern was with continuing a class that would serve a teacher-training purpose--"We still have this terrible lack of teachers."

Turning to the problem of grouping, Miss Mallison said, "I know that Mrs. Kaliski and I both prefer in classroom situations not to group so much by clinical diagnosis as by level of function and specific impairment of such children..."

Dr. Denhoff: "Do you feel that as an adjunct to the special classes you have seen here, there is any value in setting up a nursery school or having a preschool set-up for the brain injured children so that you could groom them into more formal education?"

Miss Mallison: "Very frankly, I think that if you are going to set up anything at all, many children would be better served by getting intensive individual training and not being in a group situation--or perhaps, having a supervised playroom as an adjunct to that kind of service so that they would get training once a day or once a week or whatever it is that is needed...If I had a choice, it must be either a group all day long, or individual, and not both... I think it is easier to train a teacher to work with one child at a time, because you can more specifically pinpoint what a problem is, what you are doing, and then have the teacher do it and keep a check on what the teacher is doing so that she will also gradually learn how to handle a group...I do not think there is really an effective way of training teachers in a theoretical course..."

Mr. Sherlock raised a question about home training for parents of brain injured children.

Miss Mallison said that as she used the term, it did not necessarily mean that the person working with the child should go into the home and work with the parents. "I give parent home training," she said. "They come once a week with the child; and part of the therapy with the child involves having the parents watch, having the parents see. They see what is being done with the child, and I give them a specific set of things to do with the child..."

Summary of October 26, 1960 Interview with Miss Ruth Mallison, Educational Therapist from New York City

Those present included Dr. Novack, Miss Gildea, Messrs. Sherlock, McCarthy, and Durocher.

Mr. Sherlock began by asking Miss Mallison what idea she might have on bridging the communication gap between the clinic and the teacher.

Miss Mallison replied that in the first place, the teacher should be able to visit the clinic and attempt to understand what the people in the clinic are looking for in the children. She added, "I really am convinced that in special education of such children, unless you can teach teachers or train them, or have someone do it for them and demonstrate with them right in the class and show them on what they are going to base their program, you are just wasting a lot of information that comes from the clinics. Clinics are not usually geared to do educational evaluations, but I think if teachers are not trained to do this, they cannot really use the clinical information."

Mr. Sherlock asked, "Would it then follow that we should also expose the clinic to the public school class?"

Miss Mallison replied that this would depend entirely on the type of class involved and on the type of information the teacher herself was able to provide the clinic on each child.

Mr. Sherlock suggested that there appeared to him to be a need for education of the clinicians as well as the teachers if communication between them was to be improved. Much of the information returned by the clinic, he said, was not of much value to the teacher.

Miss Mallison replied that it is the responsibility of the school people to ask the clinicians "the right type of question." She added that she did not think the clinicians should be expected to set up an educational program for the children, "which is oftentimes what the teachers expect them to do." If the school believes something vital is missing from the clinic's report on a child, then the school should keep asking until it gets the information it needs.

Mr. Sherlock: "Unfortunately, all of our disciplines up until a few short years ago--and we still haven't been able to get them very far away from this--have tended to work apart."

Miss Mallison: "Again, I think it boils down to the fact--how well trained are the people who work with the children in the school...I think a carefully trained person to do an educational evaluation is imperative with brain injured children in order to set a program up until you have teacher-clinicians, which you obviously don't have yet."

Mr. McCarthy suggested that the solution to the communication problem would be to have an education diagnostician on the clinical team whose responsibility it would be to pass educational evaluations on the children along to the classroom teachers and supervisors.

Miss Mallison did not agree but insisted on her view that the teacher herself must know how to do the educational evaluation if she is to have any success. She explained, "When you are working with brain injured children, you have to be a teacher-clinician or you have to have someone like that involved. It goes far beyond one evaluation--this is constantly on-going in terms of education. You see, the clinic evaluations may not change or may not significantly change for a long time; but I think the educational program which is based on such an evaluation has constantly to be adjusted in order to give the child function and to use what the child has learned."

In answer to a question by Mr. Durocher that brought up the problem of training teachers for special education, Miss Mallison said that there appeared to her to be no substitute for having teachers who are specifically trained to handle brain injured children. She conceded that an untrained teacher of high ability might achieve "a great many results; but I don't know if this is the quickest process in the long run or if this is the best way to save money, because it will probably take longer..."

She went on to say that the skilled teacher of brain injured children must have a very clear idea of the performance of normal children of the same age so that she will not lose her perspective and expect too much. No one should attempt to teach the brain injured, she said, until she has "had a few years of living with and teaching normal children."

Mr. Sherlock: "You don't think, then, that if we had a really sophisticated student we could maybe utilize some of the clinical techniques you have mentioned in training him at the undergraduate level and expect him to do at least a very decent job without ordinary classroom experience?"

Miss Mallison: "Of course you can. I think it happens over and over again, but I don't see why one should take the exceptional cases and make them the general rule...I still think that even the exceptional person who is going to be a teacher will still do a better job if he knows what groups of children do outside, what kids talk about..."

Mr. Sherlock suggested that the special education teacher should constantly read texts dealing with normal behavior; but Miss Mallison said that, in her opinion, experience was preferable to reading--"You can always catch up on your reading; I am not so sure you can catch up on your living with if you already have one job."

Mr. McCarthy asked Miss Mallison if she could describe some of the techniques she uses to approach very young brain injured children. She replied that "it depends entirely on the type of child. You can't do it by rule of thumb."

She added: "To say a child is brain injured means essentially nothing at this point...It only means that he needs some type of special handling." She said that brain injury is expressed in a wide variety of symptoms, and the training for a particular child must fit his symptoms.

"You have to start from the time the child comes to you," she said. "You can't sit back and say you will observe him for five months. You start therapy from the second the child comes to you no matter what you do. If you don't know what you are looking for, you can't do teaching, you can't do therapy. You can't tell everybody else what to do, either. This is very practical."

(Soon after this point, there is a note that Dr. Novack had to leave the meeting, and Mrs. Mullaney and Miss Bonaventura joined it; but there is no further transcript of the proceedings after their arrival.)

Summary of Evaluation Session of November 30, 1960

Dr. Novack noted that the special class teachers, Mrs. Mullaney and Miss Bonaventura, were unhappy about missing out on the evaluation sessions, because they took place in the morning. "The teachers complain that they cannot get substitutes for the time we now meet, and they feel they are losing out. They do not get the benefit of these meetings and psychologically, this is rather unnerving. They think they are missing a great deal when they do not attend these sessions."

Dr. Denhoff: "It seems to me the time has come, if you are going to have your teachers here, for us to review what we did last year, to assess what we want to do...Can we sit down as a group in a scientific, orderly way and devise measurements. We are working at a highly individual level, everybody thinks differently, we all have our impressions..."

Dr. Novack: "I think we should start deciding among ourselves what we are measuring. This is hard to come to because of a difference in thinking in terms of what we observe and why it is what it is."

Mr. Holden: "...We need to get back to basics. We are using words without meanings."

Dr. Denhoff: "...If we are to train students, we must have a manual to describe what they are looking at--it must be a multi-faceted approach. This has never been done. We have to set up guideposts."

Dr. Novack recalled that there had been some talk of getting a classroom with an observation booth, with a one-way window, so that "the children can be observed in a naturalistic manner."

Dr. Denhoff said, "This type of thing becomes a must."

"If we are to get worthwhile observations, they must be made with this one-way vision," Dr. Novack said. "If it is done any other way, we will get questionable results...We must understand how a teacher functions--research is very important and interesting to us; but to a teacher, it is just something which breaks into the school day. It takes away teaching time."

There was general agreement on the need for detailed observation of the children in the class but not on how the observations could be recorded. Dr. Novack commented that "the teacher cannot make these observations, her hands are full--we talked originally about teacher's observations. They are impossible to get in detail."

"They are also colored by her bases of orientation and experience," Dr. Denhoff said.

Dr. Novack: "If a whole team of people from different orientations could look at a film of behavior, certainly the group could attempt to come to a conclusion. When we examine these things individually, we come up with 'we don't agree, I didn't see that, this means this to me.' In order to do what people want in terms of gathering information, we must have better ways of observing."

Dr. Denhoff: "These classes and their teachers have to be observed without their knowing it so that the teacher will be her natural self so that we can try to find out what it is that she has, what it is she does."

(Television was discussed as one possibility but rejected by Dr. Boyer as being too expensive.)

Dr. Denhoff: "...We are all agreed that our greatest weakness is the failure of intercommunication--we have many disciplines, differences in definitions of what we are doing. We want to compromise, to make definitions that can be transmitted to new teachers. We need to set up specific measurements of what our good teachers are doing, how they differ..."

Dr. Boyer summarized the object of the project as to develop techniques for classroom teaching of brain injured children and then said, "In one year, what you have told me is that you found gadgets are helpful, but the difference is in personality--it is the kind of attention that is given to a kid--this was the only thing that made any difference. I reported this to Washington and expected them to blow their tops but found that other research groups have told them the same thing."

After some discussion of the teacher's role in the educative process, Dr. Denhoff said, "I think it is interesting that we took ten kids, some of the worst behavior problems in the city, and we have them sitting in this classroom like little angels. These kids are severely disturbed, but they behave beautifully in there. They are kids who could not be tolerated in a room where there are thirty-five, but she has only ten. Is it just numbers a teacher has to contend with? Is it the teacher's confidence when she learns about the student body? These are things we want to learn. It may not be anything to do with the teacher."

The question was raised as to how "attention span" should be defined. "I don't think the answer lies within the child," Mr. Sherlock said. "It lies within the teacher. I think we should measure the teachers to find out how they are able to motivate, to generate interest."

There was a brief discussion of teaching theory; then Dr. Novack said, "We have the responsibility of following through so that all we have done is not wasted and can be applied to other situations. With Dr. Thorp's encouragement, undergraduates are coming in for observations; they are becoming fond of the children, getting the feel for them--it is very worthwhile."

APPENDIX E

BUILDING A PSYCHOLOGICAL FRAMEWORK OF CLINICAL TUTORIAL TECHNIQUES FOR CLASSROOM INSTRUCTION OF BRAIN DAMAGED CHILDREN

Peter F. Merenda

University of Rhode Island

It is a widely-known fact among psychologists and teachers in special education that the training and instruction of brain damaged children, when attempted, is done so on a tutorial basis (one-to-one relationship). An attempt has been made in connection with this project to investigate, on a largely theoretical basis, the possibility and feasibility of employing current tutorial techniques in the classroom instruction of small groups of brain damaged children. In order to evaluate the applicability and the practicality of application of these individual techniques to the classroom situation, it was deemed necessary to build a theoretical framework for the purpose of making somewhat explicit the portrayal of what factors are involved in these processes and how these factors are interrelated. Accordingly, the model described here was conceived.

Basic Assumptions: It is assumed that brain damaged children display symptoms which, in general, are characteristic of the group as a whole and which serve to distinguish brain damaged children from those who possess the abilities and facility for normal functioning. It is further assumed that there is variability in the display of these symptoms within the group as well as between the two groups; brain damaged vs. normals. By this we mean that a brain damaged child may demonstrate one or more of these symptoms, and the particular syndrome is unique to each child. However, it is realized that individual symptoms are shared by groups of brain damaged children, and further, that there exists the probability that even within small groups, syndromes may be shared.

Another assumption is that these symptoms inhibit the learning process and either retard or prevent the desired outcomes of learning. In order to overcome these obstacles it, therefore, becomes necessary to consider how the symptoms are interfering with the usual psychological processes involved in the learning situation. It is also recognized that certain of these symptoms have greater inhibitory influence upon the learning activities in a particular subject-matter area than they do in others, and hence, it is assumed that there is some substantial correlation which exists among the symptoms, technique used, and subject-matter being taught.

Finally, it is assumed that each technique which is proposed specifically for the purpose of educating brain damaged children serves to provide the learner with the means of overcoming the inhibitory effect of the symptom.

Model: In the light of the foregoing assumptions and considerations, a four-dimensional theoretical model has been postulated. The four dimensions of this model are: (1) Symptoms; (2) Psychological Factors; (3) Subject-Matter; (4) How to Treat a Symptom.

Symptoms: It is postulated that the principal behavior characteristics typical of brain damaged children which inhibit their progress in the regular classroom learning situation and which severely retard or prevent learning to result are the following: (1) Hyperactivity; (2) Distractability; (3) Dissociation; (4) Motor Disinhibition; (5) Perseveration; (6) Speech Defects; (7) Sensory Motor Disturbances; and (8) Improper Motor Coordination.

Psychological Factors: The sensory mechanisms which are stimulated and rendered operative in the learning process, and the perceptual skills which are required to be developed in order for efficient learning to result are considered to be those involving primarily the senses of sight, hearing, and touch; the kinesthetic sensations and the coordination of movement of body and limbs; and concept formation including concept of self and body image. The specific factors which have been integrated and incorporated within the model are (1) auditory-motor skills; (2) auditory perceptual skills; (3) visual motor skills; (4) visual perceptual skils; (5) kinesthetic sensations; (6) tactile sensations; (7) concept formation; (8) spatial relations ability; and (9) the development of the self-concept.

Subject-Matter: In light of the fact that the techniques under consideration in this project are related to basic learning, the subject-matter areas included in the proposed framework are those in (1) reading; (2) writing; (3) arithmetic; (4) speech; and (5) spelling. Also since it becomes apparent that certain instructional techniques may contribute to learning in a general but yet significant way, the additional categories of (6) general skills; and (7) general concepts have been included.

Treatment Method: The principal objectives of the instructional techniques designed and employed in the education of brain damaged children relate to the peculiar nature of the symptoms. In the application of a particular instructional technique, an attempt is made to limit, modify, or capitalize on the specific nature and feature of the input system of the individual learner. Accordingly, the following objectives are proposed, and these are considered to be ways in which a specific technique attempts to overcome the inhibiting effect upon learning of a particular symptom or syndrome: (1) substitute an input; (2) supplement or augment the input; (3) reduce the background (i.e. concentrate the input, limit the input, or minimize distracting factors); (4) direct and channel overactivity; (5) induce discontinuity; and (6) induce awareness of the meaning of the activity.

Taxonomy of Techniques: In accordance with the preceding framework of clinical tutorial techniques for classroom instruction of brain damaged children, a list of one hundred such techniques which appeared to fit the model was selected largely from the professional literature. The specific reference list for the source of the majority of these techniques is appended. A classification of these techniques was made consistent with the model. A classificatory schema was developed to facilitate the taxonomy.

IBM Cards: The step-by-step procedures involved in the techniques were typewritten on the backs of IBM mark-sense cards. A coding system was developed for recording on the mark-sense side of the card the appropriate information on each of the four dimensions of the theoretical model for each of the examplary techniques. Such a system facilitates the processing and classifying of a particular technique, and an extension of the card deck could serve to provide the teacher with a ready catalog and library of possible usable techniques. A teacher in possession of the proper diagnostic information in terms of the four categories contained in the framework could have access in very short order (assuming data processing equipment were available) to a number of instructional techniques for teaching small groups of brain damaged with common symptoms. For example: Consider the situation in which the teacher is confronted with the task of teaching number concepts to a group of brain damaged children who visibly display the symptoms of distractability and dissociation. The teacher appropriately judges that concept formation is one of the factors involved in such a learning exercise. He desires to attack the problem by appealing to both the auditory and visual senses of the learners in the development or reinforcement of these perceptual skills. He further concludes that the best way to overcome the obstacles to learning concepts for these children who show both distractability and dissociation would be to substitute an input. A simple sorting process would isolate card #29. The teaching technique is described on the back of the card. (the columnar code interpretation sheet for this schema is appended). Assuming an infinitely large deck of similar cards, many similar techniques would be expected to be isolated on any one sort.

SUMMARY

THE ADAPTATION FOR GROUP CLASSROOM USE OF CLINICAL TECHNIQUES FOR TEACHING BRAIN INJURED CHILDREN

Harry S. Novack

Rhode Island Department of Education
Providence, Rhode Island

Project Number: 186

September 1, 1959 to February 28, 1961

SUMMARY

BACKGROUND: Traditionally, the relatively few and recent attempts which have been made to provide academic instruction to brain injured children have been limited largely to a tutorial basis. This system has proved to be expensive and inefficient. If similar instructional techniques could be adapted for use in the classroom with small groups of students, a significant savings in time, money and effort would likely result. The demonstration that clinical tutorial techniques could be adopted for classroom use would also further extend the opportunities for educational achievement of brain injured children which are currently limited through the necessity of the one-to-one instructional setting demanded by the tutorial approach.

OBJECTIVES:

1. To collect clinical tutorial techniques being used to educate brain injured children.

2. To classify clinical tutorial techniques for educating brain injured children in a framework useful for developing techniques for group teaching.

3. To adopt clinical techniques to group of brain injured children.

4. To develop a model demonstration classroom for experimenting with and testing the adopted clinical techniques in order to determine their feasibility for group use.

5. To provide a laboratory situation for the observation of the reactions

of brain injured children to group teaching procedures.

6. To provide observational opportunities for teachers and education students.

7. To develop new hypotheses for experimentation in the group education of brain injured children.

PROCEDURE: A classroom devoted entirely to the instruction of brain injured children was established at the Henry Barnard School, the laboratory school of Rhode Island College. There were ten brain injured children assigned to the class. This sample was drawn from two widely-known institutions in Rhode Island; the Meeting Street School, a diagnostic and treatment center specialising in brain injury dysfunction; and the Emma Pendleton Bradley Hospital, a psychiatric training center and residential hospital specializing in the diagnosis and treatment of pre-teenage children who are emotionally disturbed and/or who show adjustment problems. All students selected for the special experimental class were screened and recommended by a professional diagnostic team consisting of a psychiatrist, neurologist, psychologist and psychiatric social worker. The teacher for the special class possessed academic training and experience in the field of special education. She held a Master's degree in this field of specialization, and although her previous experience had been largely in the teaching of mentally retarded children, she was well equipped to assume the duties of her assignment.

The class met daily and received academic instruction in the morning session. In the afternoon, the schedule included integrated play activities conducted under the direction of a trained physical therapist and activity leader. In addition, a weekly audio-visual program was conducted by the State Director of Audio-Visual Aids.

The literature was searched by the teacher and other principal participants in the project in an effort to become familiar with the major clinical techniques currently in use. Also, consultants who had had personal experience in the teaching of brain injured children and who had applied the clinical techniques on a tutorial basis were brought in individually for monthly conferences with the staff and principal participants and for classroom observation and evaluations. While many of the clinical techniques proposed by the consultants and in the meager literature available at the time the project began proved to be adaptable, at least to the extent of being attempted in the classroom, the teacher for the most part devised her own materials and techniques according to the educational and behavioral needs of each child as she was able to determine them.

During the course of the project, a theoretical psychological framework was developed by a psychological consultant to the Rhode Island State Department of Education for the purpose of classifying tutorial techniques into a system which might prove useful in the classroom situation. This paradigm was constructed in four dimensions: (1) overt behavioral symptoms displayed by the brain injured children; (2) the psychological factors involved in the learning situation; (3) subject-matter areas; and (4) means of treating each symptom. A coded taxonomy system was also designed and developed, and IBM punched cards were produced to contain the data for ready sorting and classification.

RESULTS AND CONCLUSIONS:

1. It was discovered during the course of the project that there existed a paucity of reference sources regarding teaching techniques for brain injured children. The few that were available were found in a handful of texts and in a few selected professional journals. These were all thoroughly searched, reviewed, and annotated.

2. A theoretical framework was developed for the purpose of classifying tutorial techniques for educating brain injured children which might prove useful for developing techniques for group teaching.

3. The results of the study reveal that certain clinical tutorial techniques can be adopted for group instruction of brain injured children. However, there appears to be one critical reservation: The process of adaptation had to be individualized in so many instances that it is impossible to predict that the specific techniques which seemed to work with one group would also work with another. The results of the study further suggest that as the behavioral symptoms vary from one group of brain injured children to another, the applicability of the same teaching techniques to both groups is lost.

4. Despite the shortcomings in attempting to apply tutorial techniques to groups of brain injured children who are variable as to symptoms which impede learning, definite educational progress was noted. At the beginning of the project, none of the ten children in the class was able to perform sufficiently on the Metropolitan Achievement Test Battery to achieve a meaningful score on the first grade norms. At the end of the first academic year in the classroom, the children were retested on the same test battery. The results obtained now on

the four school achievement areas measured by the battery were all in the scoreable category, and these forty grade equivalents ranged from a single grade equivalent of a little below grade level 1 to grade equivalent scores of 2.5. The lowest performance was given by the tenth child who was not admitted to the class until the beginning of the second term.

5. The findings relative to the problem of a manageable class size were that the number of students in the class of the project was probably too great. It was found that ten students was probably too many, especially if they represent a heterogeneity of symptoms. A class size of between five to eight is likely to be less wieldy and more manageable. It was further found that the teacher's effectiveness would have likely been enhanced considerably through the employment of a full-time teacher's assistant.

6. The findings leave little doubt that the key element in attempting to apply clinical techniques to a class of brain injured children is the teacher of that class. Throughout the study, it was continuously demonstrated that the skill of the teacher in controlling the classroom situation at all times, in being able to improvise her own methods and techniques-sometimes rather spontaneously, in knowing when and how to vary the routine, and in being perceptive of the children's problems and motivations is at least as important as the techniques themselves - or is even likely to be more important.

7. The results of and conclusions drawn in this study further lead to the following implications and recommendations to those who will be conducting additional research in this general area:

a. Great care must be exercised in the selection of the children for the class to keep the range of learning problems as narrow as possible.

b. The size of the class must be kept small; ten is probably too many.

c. The teacher must be well-trained, highly motivated, and possess great skill and patience in the handling of handicapped children.

d. There must be professional assistance available outside the classroom - a physician, physical therapist, psychologist, and social worker as a minimum.

e. There should probably be a full-time teacher's assistant in the classroom.

f. Selection criteria for grouping brain injured children should probably be based more on educational behavior than on medical diagnosis.

BIBLIOGRAPHY: There are 40 references listed in the final report.